

BREDIN-ARCHBOLD-SMITHSONIAN  
BIOLOGICAL SURVEY OF DOMINICA

The Family Dolichopodidae with  
Some Related Antillean and  
Panamanian Species (Diptera)

HAROLD ROBINSON

SMITHSONIAN CONTRIBUTIONS TO ZOOLOGY • NUMBER 185

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## ABSTRACT

Robinson, Harold. Bredin-Archbold-Smithsonian Biological Survey of Dominica: The Family Dolichopodidae with Some Related Antillean and Panamanian Species (Diptera). *Smithsonian Contributions to Zoology*, number 185, 141 pages, 231 figures, 1975.—The Dolichopodidae of the Island of Dominica are surveyed and keys and descriptions are presented for the 30 genera and 113 species. Three genera, *Cryptopygiella*, *Dominicomysia*, and *Micromedetera*, and 69 species from the island are described as new. New species described from other localities include *Asyndetus deficiens* from Mona Island, *A. pogonops* from Puerto Rico, *Enlinia jamaicensis*, *E. crassipes*, *E. farri*, *Harmstonia acuta*, *H. jamaicensis*, and *Micromedetera wirthi* from Jamaica, and *Cymatopus wirthi*, *Enlinia crassitibia*, *E. wirthi*, *E. panamensis*, *Harmstonia wirthi*, *H. panamensis*, and *Micromedetera shannoni* from Panama. Two groups of genera, *Enlinia-Harmstonia* and *Micromedetera*, are noted for their particularly small size and elusive habit. It is suggested that these microdolichopods have a different basic biology, perhaps partially abandoning the predaceous habit that is characteristic of most of the family. Special note is taken of members of the predaceous genus *Medetera* found in proximity to various termite nests on Dominica.

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# BREDIN-ARCHBOLD-SMITHSONIAN BIOLOGICAL SURVEY OF DOMINICA

## The Family Dolichopodidae with Some Related Antillean and Panamanian Species (Diptera)

*Harold Robinson*

### Introduction

Participants in the Bredin-Archbold-Smithsonian Biological Survey of Dominica have included many entomologists who have observed and collected samples of the extensive dolichopodid fauna of the island. The author participated personally in the first period of the Survey, from January to April 1965, and other collectors included Dale F. Bray of the University of Delaware, Paul J. Spangler of the Smithsonian Institution, and Raymond J. Gagné, George C. Steyskal, and Willis W. Wirth of the U.S. Department of Agriculture. The special efforts of a number of the collectors are particularly notable in the representation of the more rarely collected smaller members of the family. It is hoped that the information presented here covers most of the species of Dolichopodidae on the island, and that it will furnish a guide for recognizing genera and species groups in many of the adjacent regions. Some results of studies on Puerto Rican, Jamaican, and Panamanian species have also been included to increase the usability of the treatment.

Previous to the Bredin-Archbold-Smithsonian

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Survey there were no reports of the family Dolichopodidae from the island of Dominica. The most pertinent literature has been two papers by J. M. Aldrich on the Lesser Antillean islands of St. Vincent (1896) and Grenada (1902) based on the collections of H. H. Smith. More recently, a few initial results of the Survey have been published and these include the descriptions of *Chrysotus mexicanus* (Robinson, 1967a), *Stolidosoma hexachaeta* and *Pseudosympycnus perornatus* (Robinson, 1967c), *Harmstonia simplex* (Robinson, 1967b), and, in addition, notes on the behavior of Dominican species of *Enlinia* (Robinson, 1969).

The island of Dominica is a particularly favorable habitat for Dolichopodidae. Though the island has only 300 square miles, the terrain is primarily rough and moist. The island has two of the highest mountains in the Lesser Antilles, Diablotin (4661 ft) and Trois Pitons (4550 ft), and has hundreds of separate rivers and streams. The island has had limited disturbance and has retained many areas of essentially virgin forest. In the years since the survey began there has been more disturbance and increased cutting of forests, but effects on the Dolichopodidae of the island are not known.

A total of 113 species of Dolichopodidae in 30 genera is recognized from Dominica in the present

treatment, with 69 of the species described as new. This total compares with the approximately 1000 species previously described from the entire Neotropical region (Robinson, 1970b). Of the 113 species, the rate of endemism is uncertain. Most of the previously described species are widely distributed or at least known throughout the Lesser Antilles. A few new species which are maritime forms seem widely distributed. Still, most of the new species are probably restricted to Dominica or to the series of closely adjacent islands, and they do not seem to occur as far south as St. Vincent where other related species were collected by H. H. Smith. Three new genera are described here from Dominica, but one of these is known also from Jamaica and Panama and the other two will probably prove to be more widely distributed.

The frequency of occurrence of some subgroups of the Dolichopodidae of Dominica seems significant. The subfamily Dolichopodinae, which is the predominant subfamily in the Holarctic region, is represented on the island by only 15 species. The Sympycninae, which are the predominant group in southern South America, are represented on the island by only 5 species. The lower representation of these two subfamilies seems to be characteristic of the whole Neotropical region. There are 13 species of Sciapodinae on the island, and this is a smaller proportion than usually noted for the tropics. Still, the smaller proportion may be the truer representation since the subfamily is more widely distributed on vegetation and is more often collected by nonspecialists. The Diaphorinae are the predominant group in Dominica as elsewhere in the West Indies, being represented by 30 species. The recognition of the diaphorine genera of the island is simplified by the lack of any of the broad-faced species of *Chrysotus* that are difficult to distinguish from *Diaphorus*. Two genera of the Medeterinae are worthy of individual comment. *Medetera*, represented on the island by 6 species, is often found in drier places than most Dolichopodidae. The species often occur on tree trunks and the Dominican species have been seen in close association with termite nests. Such association seems significant in view of the predation of more northern species on bark beetles in galleries under tree bark. The genus *Thrypticus*, which seems exceptional in having apparently phytophagous larvae, is represented on the island by 12 species.

Such a concentration of the genus in so small an area seems unprecedented, but personal experience indicates that the discrepancy may result from problems in collecting. In spite of a few definite efforts, the author was unable to personally collect any of the many species of *Thrypticus* on the island. Perhaps the members of the genus are subject to more seasonal fluctuations than most Dolichopodidae. In any case, the existing reports of 26 species from the entire Neotropical region can hardly be a true indication of the status of the genus.

An important element of the dolichopodid fauna of Dominica consists of a number of rather unrelated genera that might be referred to as microdolichopods. These forms are usually about 1 mm long, or less, and include genera in at least two groups, the *Enlinia-Harmstonia* group and the *Microcyrtura-Microchrysotus-Micromedetera* group. Because of small size and elusive habits, these species have been largely overlooked in the past, but they seem to have speciated extensively in tropical America. I have previously noted (Robinson, 1969) the apparent absence of *Enlinia* from the Eastern Hemisphere, but with the exception of one genus there is no evidence of any microdolichopods in the Eastern Hemisphere. The one exception, *Cyrturella* of Western Europe, is a single species obviously related to the *Microcyrtura* series of tropical America, and it might represent a recent incursion of the group into the Eastern Hemisphere.

The fact that the microdolichopods are almost entirely of a size never attained by even the smallest species of *Chrysotus* or *Micromorphus* has made me suspect that the group has a different basic biology. Eating habits need particular investigation. Microscope slides of some Dominican species of *Enlinia* have shown diatoms in the tract of the specimens but whether these are from primary or secondary sources is not known.

The present study has been made possible not only by the contributions of Mr. Bredin and Mr. Archbold but by collectors who participated and by curators of the various institutions that have provided reference material. Special acknowledgment is due George Steyskal for his constant cooperation in making available collections from the National Museum of Natural History and from the Survey and to Kenneth G. V. Smith of the



British Museum (Natural History) for making observations and providing loans of specimens from the H. H. Smith collections.

The Dolichopodidae in this treatment are arranged in subfamilies as delimited in the recent revision of the family (Robinson, 1970a). The 30 genera known from Dominica can be distinguished by the following key. Three West Indian genera not included in the key are *Sarcionus*

Aldrich, a genus related to *Pelastoneurus* but lacking the broad face; *Proarchus* Aldrich, a genus also related to *Pelastoneurus* but having a straight fourth wing vein; and *Nanomyia* Robinson, a genus related to the more northern *Chrysotimus* and keying here to *Discopygiella* but differing from the latter by the cylindrical hypopygium, the broad face with parallel sides, and the distinctly pollinose body.

### Key to the Genera of Dolichopodidae of Dominica

1. Vein 4 of wing with a widely diverging fork beyond the crossvein .....2  
    Vein 4 of wing not forked beyond the crossvein .....4
2. Front not excavated above as seen from anterior view; eyes nearly contiguous below the antennae ..... *Leptorhethum*  
    Front deeply excavated as seen from anterior view; eyes widely separated .....3
3. Scutellum with 2 large bristles; front with only black bristles; setae of calypter pale .....  
    ..... *Sciapus*  
    Scutellum with 4 large bristles; front with hairs, sometimes very short; setae of calypter black ..... *Condylostylus*
4. Costa not distinct beyond tip of wing vein 3; vein 4 weak and usually discontinuous in last part ..... *Asyndetus*  
    Costa continuous to tip of vein 4; vein 4 not weak or discontinuous in last part .....5
5. Wing veins 3 and 4 distinctly diverging from base to tips, in some males veins much distorted, vein 3 usually ending near wing tip and vein 4 ending far behind .....6  
    Wing veins 3 and 4 essentially parallel or converging beyond the crossvein, vein 4 ending nearer or before tip of wing .....7
6. Acrostichal setulae absent; small setulae present on face above mouth of female .....  
    ..... *Harmstonia*  
    Acrostichal setulae present; female face without setulae ..... *Enlinia*
7. Wing vein 2 short, ending near middle of costa halfway between ends of veins 1 and 3; species ca. 1 mm long; male hypopygium with distinct projections asymmetrically from one side ..... *Micromedetera*  
    Wing vein 2 ending well beyond middle of costa, much closer to end of vein 3; species 1.2–7.0 mm long; male hypopygium without distinct projections asymmetrically from one side .....8
8. Wing vein 4 ending distinctly before tip of wing, usually bent or arching forward near or beyond middle of last part .....9  
    Wing vein 4 ending at or behind tip of wing, vein 4 straight or evenly curved or slightly sinuous in last part .....12
9. First antennal segment bare above; face with distinct vertical median groove; male hypopygium small and enclosed in tip of preabdomen ..... *Plagioneurus*  
    First antennal segment with hairs on upper surface; face without distinct vertical median groove; male hypopygium large and projecting far forward under preabdomen .....10
10. Antenna with arista feathered by longer hairs above and below ..... *Pelastoneurus*  
    Antenna with arista not feathered, hairs not longer above and below .....11
11. Lower margin of clypeus straight across ..... *Paraclius*  
    Lower margin of clypeus rounded, produced downward ..... *Tachytrechus*
12. Antennae radially symmetrical from anterior view, segments 2 and 3 subequal in size; face and front shining metallic without evident pollen .....13  
    Antennae laterally compressed or asymmetrical, usually with enlarged 3rd segment; face often dulled or obscured with pollen .....16
13. Wing veins 2, 3, and 4 nearly parallel beyond crossvein or veins 2 and 3 slightly convergent; male hypopygium short and borne on tip of preabdomen .....14  
    Wing veins 2 and 3 distinctly diverging; male hypopygium elongate, extending far forward under preabdomen .....15

14. Wing vein 2 straight and parallel with vein 3, crossvein nearly as long as last of vein 5; abdomen cylindrical; male with distinct hypopygium bearing large external appendages ..... *Dominicomysia*  
 Wing vein 2 nearer vein 3 toward tip, crossvein about a fourth as long as last part of vein 5; abdomen flattened; male hypopygium very small without external appendages ..... *Cryptopygiella*
15. Wing veins 2 and 4 nearly equidistant at crossvein and at tips; hind coxa with 1 external bristle ..... *Medetera*  
 Wing veins 2 and 4 completely divergent beyond crossvein; hind coxa with 2 external bristles ..... *Thrypticus*
16. Abdomen distinctly flattened (densely pollinose shore species) ..... 17  
 Abdomen cylindrical or tapering ..... 18
17. Arista dorsal; mesoscutum evenly rounded nearly to scutellum; fore femur without prominent setae below ..... *Thinophilus*  
 Arista apical; mesoscutum strongly arched with flattened posterior slope; fore femur with prominent setae below ..... *Cymatopus*
18. Anterodorsal surface of middle and hind femora with distinct preapical seta ..... 19  
 Anterodorsal surface of middle and hind femora without distinct preapical seta ..... 24
19. Abdomen only about as long as thorax; hind slope of mesoscutum usually slightly flattened ..... 20  
 Abdomen distinctly longer than thorax; hind slope of mesoscutum rounded almost to scutellum ..... 22
20. Acrostichal setulae absent ..... *Micromorphus*  
 Acrostichal setulae present ..... 21
21. Acrostichal setulae biseriata; face with setulae over mouth; male hypopygium discoid with only minute appendages; male fore tarsus not modified ..... *Discopygiella*  
 Acrostichal setulae uniseriate; face without setulae; hypopygium of male broad with large apical appendages; male fore tarsus slightly modified ..... *Peloropecodes*
22. Scutellum with a few short hairs on the hind margin between the bristles; dorsocentral setae with 5th pair of six pairs reduced or lacking; male hind tibia entire at tip ..... *Sympycnus*  
 Scutellum without short hairs on hind margin; dorsocentral setae with 5th pair of six pairs not reduced or lacking, 1st pair often reduced; male hind tibia notched dorsally or anterodorsally at tip ..... 23
23. Acrostichal setulae biseriata; mesoscutum dulled by dense pollen; male fore tarsus highly modified with large 2nd segment ..... *Pseudosympycnus*  
 Acrostichal setulae uniseriate or lacking; mesoscutum shining metallic; male fore tarsus with only modified hairs on segment 2 ..... *Stolidosoma*
24. Fore coxa 2/3 as long as fore femur; anterior 1/3-1/2 of mesoscutum covered with numerous small setulae, posterior 1/3-1/2 distinctly flattened ..... 25  
 Fore coxa less than 1/2 length of fore femur; anterior margin of mesoscutum with a few series of small setulae, posterior slope only slightly flattened or rounded ..... 26
25. Antennal segment 2 projecting along inner side of segment 3; fore tarsus of male with modified claw ..... *Coeloglutus*  
 Antennal segment 2 not projecting along inner side of segment 3; fore tarsus of male without modified claw ..... *Neurigona*
26. Face very long and narrow, front very small; antennal segment 1 with hairs on upper surface, segment 3 with arista from middle of dorsal margin ..... *Symbolia*  
 Face only once or twice as high as front; antennal segment 1 without hairs on upper surface, segment 3 with arista apical or subapical ..... 27
27. Antennal segment 2 overlapping base of segment 3 above and toward inside; male palpi modified with colored margin or with large marginal setae ..... *Xanthina*  
 Antennal segment 2 not overlapping base of segment 3 above or toward inside; male palpi without colored margin or large marginal setae ..... 28
28. Abdomen of male with prominent setae on margin of segment 6 or on hypopygium; male with face broad and eyes often contiguous or approximated above the antennae ..... *Diaphorus*  
 Abdomen of male without prominent setae on 6th tergite or hypopygium; male with front broad and eyes approximated or contiguous below antennae ..... 29

29. Lower postocular surface with many rows of hairs; antennal segment 3 with slender apical projection bearing apical arista ..... *Achradocera*  
 Lower postocular surface with only marginal and small central rows of hairs; antennal segment 3 with arista subapical in notch or to one side of tip ..... *Chrysotus*

### Subfamily SCIAPODINAE

#### Genus *Condylostylus* Bigot

Medium sized to rather large with mostly metallic green or bluish head and body, with black setae. Head wider than high, vertex deeply excavated; front very broad, broader above with slender hairs on upper part; face broad, slightly narrowed below, sometimes with long hairs. Pseudotracheae unsclerotized. Antennae with subequal segments, segment 1 bare above, segments 1 and 2 truncate apically, arista dorsal, about as long as thorax, rarely ornamented. Postocular setae multiseriate.

Thorax with mesoscutum as broad as long; acrostichals biseriate in widely separated rows, as large as dorsocentrals; 5 or 6 pairs of dorsocentrals, scutellum with 4 distinct bristles all usually large, small seta on side; a few hairs above anterior coxa. Fore and middle coxae with many hairs anteriorly and 1 or more bristles distally, middle and hind coxae usually with distinct bristle on side, hind coxa with many hairs. Femora without preapical bristles.

Wings elliptical with prominent anal and basal lobes. Costa not fringed; vein 2 usually rather straight, vein 3 curving back distally and ending close to tip of vein 4; vein 4 forked in last part, anterior branch directed sharply forward and gradually or abruptly curving toward wing tip, ending very close to tip of wing, posterior branch not reaching margin; crossvein oblique, longer than last of vein 5; vein 6 represented by a slight fold. Calypter with black setae.

Abdomen of male over half again as long as thorax, narrowly cylindrical, curving downward, tergites with very large erect marginal bristles. Hypopygium small to medium sized, seated on or slightly under tip of preabdomen; lamellae often highly ornate, aedeagus usually fused in top of capsule and projecting from end. Female genitalia with few dornen.

REMARKS.—As presently delimited the genus is the predominant element of the family in the open tropical lowlands of America. The species are usually found on vegetation and are common in the sweepings of nonspecialists. The following eight species are known from Dominica.

#### Key to the Species of *Condylostylus* in Dominica

1. Wings clear or slightly clouded along anterior margin ..... 2  
    Wings with 2 transverse brown bands that are joined anteriorly ..... 5
2. Face with numerous long pale hairs below ..... 3  
    Face bare ..... 4
3. Wing clear, anterior branch of vein 4 gradually bent; hind tibia mostly yellow; male with many short curved bristles ventrally on middle basitarsus, female femora yellow ..... *C. graenicheri*  
    Wing with brown cloud anteriorly, anterior branch of vein 4 rather sharply bent; hind tibia mostly brown; male without hooked ventral setae on middle basitarsus; female femora metallic dark green ..... *C. brayi*
4. Hind tibia with only distal 1/3 brown; fore and middle tibiae with long bristles; hind femur with long dense wavy-tipped white hairs posteriorly; middle tibia and basitarsus without series of distinctive setae ..... *C. perpilosus*  
    Hind tibia wholly brown; fore and middle tibiae with bristles only twice as long as tibial width; hind femur with white hairs posteriorly only a little longer than femoral width, straight; middle tibia with ca. 12 short bristles in anteroventral series; middle basitarsus with series of slender erect cilia along anterior surface ..... *C. chrysoprasi*
5. Clypeus as wide as or wider than long; upper bristle of fore coxa near midlength of coxa; male with numerous black hairs along middle of mesoscutum and on femora; hypopygium and lamellae massive; female femora dark; halter dark in both sexes ..... *C. nigripilosus*



- Clypeus slightly longer than wide; two bristles of fore coxa near distal margin; male without black hairs on mesoscutum, black hairs of femora not prominent; hypopygium and lamellae small to medium sized; female femora yellow; halter yellow in at least female .....6
6. Length 4.0–5.0 mm; male middle basitarsi without rows of distinctive fine setae anteriorly; hind tarsus segments of progressively decreasing length, not broadened; female fore coxa yellow ..... *C. similis*
- Length ca. 6.0–6.5 mm; male middle basitarsi with rows of distinctive fine setae anteriorly; last 2 or 3 segments of male hind tarsus subequal and broadened; female fore coxa dark .....7
7. Hairs on front mostly white; knob of halter yellow; male legs with fore and middle tibiae yellow, middle tibiae without a series of distinctive setae, with row of long scales on anterior surface of segments 1–3 of middle tarsus, only last 2 segments of hind tarsus subequal; female 3rd antennal segment not distinctly larger than 2nd, hind tibia mostly yellow ..... *C. dominicensis*
- Hairs on front black; male halter brown; male legs black except for yellowish middle basitarsus, with middle tibia bearing series of distinctive setae anteroventrally, with rows of very small distinctive setae on anterior surface of only middle basitarsus, last 3 segments of hind tarsus subequal; female 3rd antennal segment distinctly larger than 2nd, hind tibia black ..... *C. quadriseriatus*

### *Condylostylus graenicheri* (Van Duzee)

#### FIGURE 1

*Psilopus graenicheri* Van Duzee, 1927a:73.

MALE.—Length 4.0 mm; wing 3.9 mm by 1.3 mm. Face and front metallic bluish green, face with whitish pollen below and many long pale hairs on clypeus, face 3/4 as wide below as at antennae, nearly as wide as height of upper part, clypeus slightly higher than wide; front with numerous black hairs at upper corners. Palpus black with 2 or 3 black marginal setae; proboscis yellow. Antennae black, setae of segment 2 longer above and much longer below; segment 3 triangular, slightly shorter than high, arista from middle of dorsal edge. Lower postocular setae white.

Thorax shining metallic green, plura obscured with white pollen. Acrostichals in 2 close rows, 4 large pairs; 5 large pairs of dorsocentrals; 4 very long scutellar bristles.

Coxae and femora blackish with green reflections and thin white pollen; trochanters, fore tarsus from tip of basitarsus, and legs II and III from tips of tibiae brown; tibiae and extreme tip of femora I and II yellow. Hairs of coxae pale, bristles black; coxa I with 2 long bristles distally and a short stiff apical comb of 4 or 5 black setae. Long pale hairs ventrally on all femora and posteriorly on femora I and III, longer black setae posteriorly on distal 1/2 of femur I. Tibia I with 1 or 2 small dorsals near base, 3 distinct antero-

dorsals near middle and near basal and distal 1/4; tibia II with 2 anterodorsals near basal 1/4 and subapical, 2 posterodorsals very indistinct and 3rd near 2/5, posteroventrals near 1/6, 1/3, and 1/2, a very long erect arching apical bristle posteroventrally; tibia III with distinct anterodorsals near basal 1/3 and at tip. Tarsus I plain; tarsus II with basitarsus slightly flattened below and bearing 2 rows of very stout, backward and downward hooked setae, adjacent lateral rows with more spreading straight setae; tarsus II with last 2 segments nearly as broad as long. Relative lengths of segments from base as tibia I, 28; tarsus I, 22–6–5–2–3; tibia II, 42; tarsus II, 26–6–5–3–3; tibia III, 53; tarsus III, 21–8–5–3–3.

Wing clear with brown veins, oval with prominent anal and basal lobes; vein 2 very slightly sinuous; vein 3 curving slightly backward near tip; anterior branch of vein 4 gradually arched near basal 1/3, ending near vein 3 and distinctly before tip of wing. Crossvein 1.5 times as long as distance from margin. Knob of halter yellow, stalk brown.

Abdomen with all tergites mostly metallic green, black bands narrow on hind margins and wider on base, becoming progressively wider on segments 3–6; hairs on tergite 1 and sides of 2 and 3 pale, marginal setae ca. 1/2 as long as width of abdomen, tip of preabdomen with tufts of ca. 10 very long, tenuous setae. Hypopygium and lamella (Figure 1) black; tips of lamellae broadly clavate with 3 long retrorse setae in single apical fascicle, upper lobe of lamella tip with many fine, curved hairs; aedeagus long and slender.

**FEMALE.**—Face with hairs about  $1/2$  as long as in male. Fore coxa without short apical comb; femora yellow, femur I with shorter black setae posteriorly; tibia I with only 1 or 2 small distinct dorsals; tibia II with large anterodorsal near  $1/4$ , 1 posterodorsal just before middle, pair of ventrals just beyond middle, 4 apicals; tibia III as in male; tarsus II with basitarsus plain; tarsus III with distal segments plain. Posterior tergites of abdomen with narrower basal black bands, marginal setae shorter, no distinct apical setae. Relative lengths of leg segments as tibia I, 23; tarsus I, 17-5-4-2-3; tibia II, 30; tarsus II, 20-7-5-3-2; tibia III, 43, tarsus III, 15-7-5-3-3.

**COLLECTION DATA.**—Dominica: 1 ♂ 17 Feb 1964 H. Robinson, 1 ♀ 22 Mar 1964 D. F. Bray, 22 ♀ 12 Oct.–16 Dec 1964 P. J. Spangler, 9 ♂ and 8 ♀ 8 Jan.–20 Feb 1965 malaise trap, W. W. Wirth, 1 ♀ 20 Apr 1966 R. F. Gagné, 1 ♂ 22 May 1966 G. Steyskal, 1 ♀ 10–12 Oct 1966 A. B. Gurney, all Clarke Hall; 7 ♂ and 4 ♀ near Layou 30 Jan–12 Feb 1964 H. Robinson; 3 ♀ Pont Casse 12 Oct–23 Nov 1964 P. J. Spangler; 3 ♀ South Chiltern Estate 8–10 Dec 1964 P. J. Spangler; 3 ♀ mouth of Layou River 4 Oct 1966 A. B. Gurney; 1 ♀ near Sylvania 25 Oct 1966 A. B. Gurney.

**REMARKS.**—The species is known from Florida southward through the West Indies, Mexico, and Central America to Colombia. The species is very closely related to *Condylostylus caudatus* (Wiedemann) of eastern North America but differs by the broad tip of the genital lamellae with 3 rather than 2 short, blunt bristles on the lower edge at the tip. The present species is probably responsible for many of the earlier reports of *C. caudatus* from the American tropics.

### *Condylostylus brayi*, new species

FIGURE 2

**MALE.**—Length 5.6 mm; 5.0 mm by 1.8 mm. Face and front bright metallic bluish green, broad,  $5/6$  as wide at clypeus as at antennae, nearly as wide as height of upper face, clypeus slightly wider than high, face with whitish pollen below and long pale hairs on clypeus; front with long pale hairs on upper part. Palpus black with 3 or 4 black marginal setae; proboscis yellow. Antenna black; segment 2 with longer seta above and a

much longer seta below; segment 3 about as long as high, bluntly pointed, arista from beyond middle of upper edge. Lower postocular setae white.

Thorax metallic bluish green, more violet anteriorly and on scutellum; pleura with slight white pollinosity. Acrostichals with 4 large pairs, 5 large pairs of dorsocentrals, 4 large scutellars.

Coxae and femora metallic dark green, coxae with slight whitish pollen, trochanters, fore and middle tarsi from tip of basitarsus, and hind leg from base of tibia brown; fore and middle tibia and slight dorsal streak near base of hind tibia yellow. Hairs of coxae white, bristles black; coxa I with 2 bristles distally; coxa II with 1 bristle. Long white hairs ventrally on all femora and posteriorly on femora I and III, those at base of femur I very long, longer black setae posteriorly on distal  $1/2$  of femur I and along anteroventral margin of femur II. Tibia I with 3 large to very large anterodorsals at  $1/4$ ,  $2/5$ , and  $2/5$ , 1 or 2 smaller anterodorsals and 1 posterodorsal nearer base, 2 posteroventrals at  $1/3$  and  $3/5$ , the last being very long; tibia II with 1 distinct anterodorsal near base, 2 very long middorsals near  $1/3$  and  $2/3$ , 1 posterodorsal and 1 anteroventral near  $1/4$ , both rather large, 2 very long anteroventrals near  $1/2$  and  $3/4$ , 4 distinct apicals; tibia III with 2 distinct anterodorsals at  $1/5$  and tip, hairs larger and sparser posteriorly along basal half. Tarsus I with last 4 joints often tightly folded, basitarsus with a few rather erect posteroventrals with 1 rather long near tip, segment 2 with ca. 6 short stout ventral setae in 2 or 3 rows; basitarsus II with scattered short erect ventral setae; tarsus III plain. Lengths of segments of legs from base as tibia I, 37; tarsus I, 30-7-4-4-2; tibia II, 50; tarsus II, 40-9-7-3-2.5; tibia III, 65; tarsus III, 30-10-7-4-2.5.

Wing slightly brownish anteriorly between tips of veins 1 and 2, veins brown. Vein 2 nearly straight; vein 3 curving slightly back distally; anterior branch of vein 4 strongly curved near basal  $1/4$ , ending just before tip of wing. Cross-vein about twice as long as its distance from margin. Knob of halter whitish, base brown.

Abdomen metallic bluish violet with distal segments green, tergites with black narrow hind margins and broader black basal bands; long white hairs ventrally and on tergite I, marginal bristles as long as width of abdomen. Hypopygium and

lamellae (Figure 2) black, outer lamellae narrowly triangular with numerous long black setae on lower margin, lamella appressed to stout, apically lobed, and setulose inner appendage, aedeagus very broad.

**FEMALE.**—Face less pollinose than in male. Legs colored as in male, white hairs on femora II and III and on posterior surface of femur I less prominent, ventrals on femur I as long or longer than in male; tibia I with dorsals at base slightly larger, only 2 very large anterodorsals and 2 very large posteroventrals; tibia II with all 3 anteroventrals very long; tibia III with posterior hairs not as long; tarsi I and II with basitarsi as in male; tarsus I with segments 2-4 plain, not folded; lengths of segments of legs from base as tibia I, 35; tarsus I, 25-7-4-3-3; tibia II, 48; tarsus II, 33-9-6-3-3; tibia III, 60; tarsus III, 27-10-7-4-3.

**TYPE DATA.**—Holotype ♂ and 4 ♂ paratypes from Dominica: Syndicate Estate, in wasp nest, 5 Mar 1964 D. F. Bray (USNM 72847). Allotype ♀ from Dominica: Clarke Hall, 11 Apr 1964 H. Robinson. Paratype from Dominica: Trafalgar Falls, 1200' 5-6 Apr 1966 R. J. Gagné.

**REMARKS.**—Distinctive features of the new species include the hairs on the face, unbanded wings, legs colored the same in both the male and female, and size of the aedeagal siphon on the hypopygium. The new species does not seem particularly related to other species of *Condylostylus* having hairs on the face and provides further evidence that the segregate genus *Laxina* Curran is untenable.

All other Dominican species of *Condylostylus* are well represented among the general collections from the island but the present species is known almost exclusively from material obtained by Dr. Dale Bray from a wasp nest in an old tree stump. The ability of wasps to collect species of Dolichopodidae otherwise unknown has been demonstrated previously in the case of *Dolichopus crassitibia* H. Robinson of the eastern United States.

### *Condylostylus perpilosus*, new species

FIGURE 3

**MALE.**—Length 5.0 mm; wing 4.6 mm by 1.6 mm. Face metallic bluish green with white pollen denser below, broad, width at clypeus 4/5 as much

as at antennae, as wide as height of upper part of face, clypeus as high as wide; front more violet with numerous white hairs along sides. Palpus black with 3 or 4 black marginal setae; proboscis yellow. Antenna black; segment 2 with rather long seta above and a very long seta below; segment 3 triangular, slightly longer than high, bluntly pointed, arista from middle of upper edge. Lower postocular setae white.

Thorax metallic green, scutellum sometimes becoming more violet; rather dense white pollen on pleura. 4 large pairs of acrostichals, 5 large pairs of dorsocentrals, 4 large scutellars.

Coxae and femora metallic dark green, coxae with slight white pollen; trochanter, fore and middle tarsi from tips of basitarsi and hind leg from distal 1/3 of tibia brown, legs otherwise including tips of fore and middle femora yellow. Hairs of coxae white, bristles black; coxa I with 2 bristles distally; coxa II with 1 or 2 bristles. Many white hairs ventrally on all femora, those of femora II and III and 1 stout white seta at base of femur I very long, white hairs posteriorly on femur III particularly long and numerous with attenuate crinkled tips; a few rather long, black setae posteriorly toward tip of femur I. Tibia I with 2 small anterodorsals near 2/5 and 3/5, 2 longer posterodorsals near 1/3 and 2/3, only a small apical posterodorsally; tibia II with 1 anterodorsal near base, 1 indistinct posterodorsal, 2 larger middorsals near 1/3 and 3/5, large anteroventrals near 2/5 and 2/3, 2 or 3 indistinct posteroventrals, 4 distinct apicals (1 short); tibia III with 2 distinct anterodorsals at 1/5 and tip, ca. 23 setae of anterior surface variously enlarged in an irregular series. Tarsus I usually folded up, basitarsus with ca. 5 longer posteroventrals of which the last are ca. 3 or 4 times as long as tibia width, segments 2-4 with many short stout setae in 2 or 3 ventral rows; tarsus II with scattered, rather erect, short setae anteroventrally and posteroventrally; tarsus III usually with slightly enlarged posteroventral at base of basitarsus. Lengths of segments of legs from base as tibia I, 33; tarsus I, 28-7-4-4-3; tibia II, 42; tarsus II, 33-9-6-3-2; tibia III, 57; tarsus III, 25-10-7-4-3.

Wing slightly brownish anteriorly between tips of veins 1 and 2. Vein 2 nearly straight; vein 3 curving slightly backward distally; anterior branch of vein 4 rather broadly bent near basal 1/3, end-

ing near vein 3 just before wing tip. Crossvein ca. 1.6 times as long as last of vein 5. Knob of halter whitish, base brownish.

Abdomen metallic bluish green, tergites with narrow black margin and broader basal bands that are wider on distal segments; many short white hairs on tergite 1 with many long crinkle-tipped hairs at side, rather long pale hairs on sides of tergites 2-5; marginal bristles nearly as long as width of abdomen. Hypopygium and lamellae (Figure 3) black, outer lamella narrowly triangular with numerous long, black setae on lower margin, lamella appressed to stout, apically lobed, and setulose inner appendage, aedeagus short and slender.

**FEMALE.**—Face scarcely narrower below; antennal segment 3 about as long as high. Legs with femora and fore coxa yellow, hind tibia brown in distal 1/3 as in male; ventral and posterior white setae of femora II and III short; tibia I with 3 large anterodorsals at 1/5, 2/5, and 3/5 of increasing size, 2 very long posteroventrals at 1/3 and 2/3; tibia II as in male; tibia III with only a few slightly enlarged anterior setae; tarsus I with segments 2-4 plain, not folded. Relative lengths of leg segments as tibia I, 35; tarsus I, 25-7-5-3-3; tibia II, 45; tarsus II, 30-10-7-3-3; tibia III, 57; tarsus III, 24-10-7-4-3. Brownish tinge of wing scarcely evident.

**TYPE DATA.**—Holotype ♂, allotype ♀, and 2 ♀ paratypes from Dominica: Clarke Hall, malaise trap 11-20 Jan 1965 W. W. Wirth (USNM 72848). Additional paratypes from Dominica: 5 ♂ and 6 ♀ 24 Jan-11 Apr 1964 H. Robinson, 1 ♂ and 24 ♀ 5 Nov-16 Dec 1964 P. J. Spangler, 6 ♀ 8-10 Jan, 1 ♀ 21-31 Mar 1965, malaise trap, W. W. Wirth, 3 ♀ 19-27 Apr 1966 R. J. Gagné, 2 ♂ and 1 ♀ 19-31 May 1966 G. Steyskal, 2 ♀ 11-17 Oct 1966 A. B. Gurney, all Clarke Hall; 1 ♂ and 4 ♀ 7 Feb 1964 H. Robinson, 1 ♀ 8-10 Dec 1964 P. J. Spangler, 1 ♀ 2 Nov 1966 A. B. Gurney, all South Chiltern Estate; 1 ♂ Syndicate Estate 5 Mar 1964 D. F. Bray; 1 ♀ Grande Savana 15 Sept 1964 T. J. Spilman; 1 ♀ Colihaut 10 Oct 1964, 3 ♀ Cabrit Swamp 3 Oct 1964, 1 ♀ Pont Casse 23 Oct 1964, all P. J. Spangler; 1 ♂ Trafalgar Falls, 1200' 5-6 Apr 1966 R. J. Gagné.

**REMARKS.**—The new species is most distinctive in the long, crinkled white hairs on the femora. The most closely related species might be *Condyl*

*lostylus tibialis* (Wiedemann) of Antigua according to description, but apparently the latter lacks the distinctive hairs on the femora, has more bristles on the fore basitarsus, and has the hind tibiae and fore and middle tarsi completely yellow.

### *Condyllostylus similis* (Aldrich)

FIGURE 4

*Psilopus similis* Aldrich, 1901:359.

**MALE.**—Length 4.4 mm; 4.2 mm by 1.4 mm. Face metallic bright green with whitish pollen below, broad, 2/3 as wide at clypeus as at antennae, as wide as height of upper part of face, clypeus slightly higher than wide; front more bluish with pale hairs on upper part. Palpus black with 3 black marginal setae; proboscis yellow. Antenna black; segment 2 with rather long seta above, 1 or 2 longer setae below; segment 3 not as long as high, bluntly pointed, arista from near middle of upper edge. Lower postocular setae white.

Thorax metallic green, scutellum sometimes becoming bluish; pleura with slight white pollen; 4 large pairs of acrostichals, 5 large pairs of dorso-centrals, 4 large scutellars.

Coxae and femora greenish brown, former with slight white pollen; fore and middle tarsi from tip of basitarsus and hind tarsus and both base and tip of hind tibia brown, middle of hind tibia brownish yellow; legs otherwise yellow. Hairs of coxae white, bristles black; fore coxa with 2 bristles, middle coxa with 1 bristle. Long white hairs ventrally on all femora, fore femur with long black setae along most of posteroventral surface, middle and hind femora with a few longer black setae ventrally on each side near tip. Tibia I with 4 large posteroventrals along basal 3/5, most basal seta usually slightly longer, no distinct apicals; tibia II with 2 small anterodorsals, 3 small posterodorsals, 2 or 3 anteroventrals the first often weak, sometimes 1 or 2 indistinct posteroventrals, 3 large apicals; tibia III with 4 anterodorsals small but distinct at 1/5, 2/5, 3/5, and apex, hairs posteriorly near base becoming slightly longer and more sparse. Tarsus I usually somewhat folded, basitarsus with 3 large posteroventrals at basal 1/3, near middle, and at distal 1/4, the last longest, segment 2 with ventral

hairs rather erect; tarsus II with only scattered, rather erect, short setae below. Relative lengths of segments of legs from base as tibia I, 32; tarsus I, 28-10-8-4-2; tibia II, 38; tarsus II, 33-10-7-4-2; tibia III, 53; tarsus III, 27-10-7-5-3.

Wing with 2 transverse brown bands in distal 1/2 joined anteriorly between costa and vein 3. Vein 2 nearly straight; vein 3 curving slightly backward near tip; anterior branch of vein 4 sharply bent at right angle near basal 1/4 and sometimes with spur vein, ending just before tip of wing. Crossvein twice as long as last of vein 5. Knob of halter yellow, base brownish.

Abdomen metallic green, tergites with narrow black margins, progressively wider black basal bands on tergites 2-6; short pale setae on tergite 1 and sides of tergite 2; marginal bristles 1/2 as long as width of abdomen. Hypopygium and lamellae (Figure 4) black, capsule very small; lamella very short and narrow with very short black hair, aedeagus very small.

**FEMALE.**—Fore coxa, femora, and hind tibia to tip yellow; the white and black ventral setae of femora shorter; tibia I with 1 small distinct anterodorsal near 1/5, smaller posterodorsals near middle and apex, small posteroventrals near 1/4 and 3/5; tibia II with 2 rather large anterodorsals at 1/5 and 2/5 nearly paired with smaller posterodorsals, 2 anteroventrals near 1/3 and 2/3, 2 anteroventrals near 1/3 and 2/3, 2 smaller posteroventrals, 3 rather large apicals. Relative lengths of leg segments as tibia I, 30; tarsus I, 23-7-6-4-3; tibia II, 40; tarsus II, 30-10-7-4-2.5; tibia III, 53; tarsus III, 22-10-7-5-3.

**COLLECTION DATA.**—Dominica: 3 ♂ 17 Feb-14 Mar 1964 H. Robinson, 1 ♀ 11-16 Dec 1964 P. J. Spangler, 4 ♂ and 4 ♀ 8-31 Jan 1965 malaise trap, W. W. Wirth, 3 ♂ 13-29 Apr 1966 R. J. Gagné, 8 ♂ and 2 ♀ 14 May-12 June 1966 G. Steyskal, all Clarke Hall; 3 ♂ and 2 ♀ near Layou 27 Jan-12 Feb 1964, 1 ♂ and 2 ♀ Rosalie River 28 Jan 1964, 2 ♂ Batali River 30 Jan 1964, 1 ♂ near Belfast 31 Jan 1964, all H. Robinson; 3 ♂ and 1 ♀ Fond Colet 5-9 Oct 1964, 1 ♂ Anse Bouleau 10 Oct 1964, all P. J. Spangler; 1 ♀ Layou River mouth 18-24 Mar 1965 W. W. Wirth; 1 ♂ Soufriere 4 June 1966 G. Steyskal.

**REMARKS.**—The species is widely distributed in the American tropics and is rather easily recognized by the very small genitalia and the rather

plain legs. Becker (1922) and Parent (1929a) failed to note the setae on the fore basitarsus in *Condyllostylus similis*, and specimens can be run in their keys to *C. unisetus* Becker of Costa Rica and Panama or *C. digitatus* (Van Duzee) of Cuba, Guatemala, Panama, and Peru. According to description, *C. unisetus* is distinct from *C. similis* by the 5-6 mm length, the wing bands being joined along the fourth vein, and the presence of only one posteroventral on the fore basitarsus. The description of *C. digitatus* does not reveal any essential difference from *C. similis*, and Van Duzee's species may be a synonym.

### *Condyllostylus chrysoprasi* (Walker)

FIGURE 5

*Psilopus chrysoprasi* Walker, 1849:646.

*Psilopus ciliipes* Aldrich, 1901:355.

**MALE.**—Length 5.2 mm; wing 5.0 mm by 1.8 mm. Face bright metallic green with grayish pollen below, broad, 2/3 as wide at clypeus as at antennae, wider than height of upper face, clypeus slightly wider than high; front slightly more bluish with numerous long pale hairs on sides and on upper half, a few dark hairs intermixed at upper corners. Palpus black with many short pale marginal setae and many larger black setae on outer surface; proboscis brownish yellow. Antenna black; segment 2 with 3 long setae above, 6 or 7 longer setae below; segment 3 shorter than high, very bluntly pointed, arista from middle of dorsal edge. Lower postocular setae white.

Thorax metallic green; pleura with slight white pollen, 4 large pairs of acrostichals, 5 large pairs of dorsocentrals, 4 large scutellars.

Coxae and femora dark metallic green, former with slight white pollen; fore tibia yellow, fore basitarsus brownish yellow on basal 1/2 or more, legs otherwise brown. Coxae with white hairs and black bristles, 2 bristles distally on coxa I, 1 or 2 bristles and black apical hairs on coxa II. Rather long white hairs ventrally on all femora and posteriorly toward bases of femora I and III, femur I with many long black setae posteriorly and anteroventrally, femora II and III with longer black setae anteroventrally and posteroventrally near tips. Tibia I with 3 or 4 small anterodorsals, 3-5 slightly larger posterodorsals, ca. 3 slightly



larger posteroventrals, only very small apicals; tibia II with all bristles rather short, ca. 13 in distinct series along anterior surface, ca. 6 scattered mostly anterodorsally along basal  $2/3$ , 3 or 4 weak ventrals, 3 stout apicals; tibia III with ca. 12 rather short but distinct bristles in anterodorsal series reaching to apex, hairs posteriorly rather coarse and long. Tarsus I basitarsus with obscure felted patch near base anteroventrally, 3 or 4 very short but distinct posteroventrals; tarsus II with row of ca. 40 long erect slender cilia anterodorsally on segment 1 continued in smaller series on segment 2, row of small sessile scales noticeable only from certain angles along adjacent anterior surface of segments 1–3, ca. 7 short but rather stout ventrals on basitarsus; tarsus III with distal segments slightly flattened. Lengths of segments of legs from base as tibia I, 33; tarsus I, 28–8–5–3–2; tibia II, 43; tarsus II, 48–11–8–3–3; tibia III, 63; tarsus III, 30–12–7–3–4.

Wing clear or very slightly brownish between tips of veins 1 and 2. Vein 2 nearly straight; vein 3 curving slightly backward near tip; anterior branch of vein 4 rather broadly bent near basal  $1/3$ , ending near tip of vein 3 and well before wing tip. Crossvein ca. twice as long as distance from margin. Halter including knob brown.

Abdomen metallic green with narrow black margins and somewhat broader basal black bands on tergites 2–5; short pale hairs on tergite 1 and sides of tergite 2, marginal bristles ca.  $3/4$  as long as width of abdomen. Hypopygium (Figure 5) small, black with short, narrowly triangular, densely hairy, pale, apically black lamellae, aedeagus short with slightly flaring tip.

**FEMALE.**—Face  $4/5$  as wide at clypeus as at antennae; palpus with only ca. 5 black setae; antennal segment 2 with only 1 particularly long seta above and 1 or 2 longer below. White hairs of femora and black setae posteriorly on femur I shorter; legs with fore and middle tibiae and most of fore and middle basitarsi yellow or yellowish; tibia I with 3 short anterodorsals along basal  $1/3$ , 3 posterodorsals and 3 posteroventrals somewhat larger near  $1/5$ ,  $2/5$ , and  $3/5$ , small apicals; tibia II with 2 strong anterodorsals near  $1/5$  and  $2/5$ , 4 smaller posterodorsals, only 3 anterior setae, 3 rather small ventrals, 5 apicals; tibia III with anterodorsal series but hairs of posterior surface smaller; tarsus I without felted patch, tarsus II

without rows of cilia or scales. Relative lengths of leg segments as tibia I, 30; tarsus I, 22–7–5–2–3; tibia II, 40; tarsus II, 30–10–7–3–3; tibia III, 57; tarsus III, 22–10–7–3–4. Knob of halter whitish.

**COLLECTION DATA.**—Dominica: 2 ♂ 17 Feb 1964 H. Robinson, 1 ♂ 12 Oct 1964, 2 ♂ and 1 ♀ 5–11 Nov 1964, 2 ♂ and 3 ♀ 11–16 Dec 1964 all P. J. Spangler, 14 ♂ and 5 ♀ 8–31 Jan. 1965 malaise trap, W. W. Wirth, 2 ♂ 15 Apr–1 May 1966 R. J. Gagné, 2 ♂ 15–20 May 1966 G. Steyskal, 1 ♀ 11 Oct. 1966 A. B. Gurney, all Clarke Hall; 10 ♂ and 5 ♀ near Layou 27 Jan–12 Feb 1964 H. Robinson; 2 ♂ near Layou, on sea grape 12 Feb 1964 D. F. Bray; 1 ♀ 9 Jan, 2 ♂ and 1 ♀ 18–24 Mar 1965 Layou River mouth, 1 ♂ Woodford Hall, swamp forest 27 Feb 1965 all W. W. Wirth.

**REMARKS.**—The species is widely distributed from the southeastern United States through the West Indies, Mexico, and Central America to northern South America. The regular row of fine, erect setae on the middle tarsus is a very distinctive feature of the male.

### *Condyllostylus nigripilosus*, new species

FIGURE 6

**MALE.**—Length 5.0 mm; 5.2 mm by 1.8 mm. Face bright metallic bluish green without distinct pollen, broad,  $4/5$  as wide at clypeus as at antennae, as wide as height of upper face, clypeus wider than high; front slightly more bluish with numerous black hairs on sides and around ocelli. Palpus black with numerous long black hairs on surface, pale hairs on margin; proboscis brownish yellow. Antenna black; segment 2 with 1 or 2 long setae above, 1 longer seta below; segment 3 oval, about as long as high, bluntly pointed, arista from near tip on dorsal edge. Lower postocular setae white.

Thorax metallic green, becoming more violet on scutellum; pleura with very slight whitish pollen; 4 large pairs of acrostichals, 5 large pairs of dorsocentrals, 4 large scutellars, many long fine black hairs anteriorly between acrostichals and posteriorly covering whole area before scutellum.

Coxae and femora black with green reflections, former with slight white pollen; legs otherwise

brown with fore tibia lighter brown. Fore coxa with white hairs and 2 black bristles, the first bristle up near midlength of coxa; most hairs and single large bristles of coxae II and III black. Femur I with row of ca. 7 very long white ventral hairs with longest at base, long black hairs anteroventrally, distally, and posteriorly, the very long black hairs posteriorly near the base with somewhat crinkled tips; femora II and III with very long hairs ventrally and posteroventrally, all black except some near base. Tibia I with 5 or 6 dorsals in series of increasing length, 3 or 4 posteroventrals in short series of markedly decreasing length, long apical seta posterodorsally, a few rows of very fine yellow hairs more evident posteroventrally along distal 2/3; tibia II with 4 anterodorsals with smallest at 1/4, large at 2/5, 2/3, and apex, very large ventrals near 1/5 and at tip; tibia III with irregular series of ca. 11 long anterodorsals including more remote ones at 3/4 and tip, posterior hairs very long, especially toward base. Tarsus I basitarsus with very fine, scarcely distinct felt of hairs ventrally, without spicules; tarsus II basitarsus with ca. 8 scattered, very short, rather erect setae below. Relative lengths of leg segment from base as tibia I, 32; tarsus I, 35-7-6-4-3; tibia II, 47; tarsus II, 47-10-7-4-2; tibia III, 70; tarsus III, 33-10-7-4-3.

Wing with two transverse brown bands joined anteriorly between costa and vein 3, with long, narrow, scarcely evident connection along vein 4. Vein 2 nearly straight; vein 3 curving slightly backward distally; anterior branch of vein 4 rather sharply bent near basal 1/3, ending just before wing tip. Crossvein 1.5 times as long as last of vein 5. Halter blackish brown.

Abdomen metallic dark bluish green with narrow black hind margins on tergites. Many long hairs on all sclerites all black except those at side of tergite I and on sternites 1 and 2; marginal setae nearly as long as width of abdomen. Hypopygium (Figure 6) and almost all lamellar structure blackish, tips of inner appendages slightly reddish brown; outer lamella rather oblong with fringe of slender short setae, lamella appressed against massive inner appendage; tip of inner armature with small inward-turned lobe bearing dense apical tuft of short stout black setae.

FEMALE.—Face slightly more pollinose than in male, hairs on front shorter; palpus as in male.

Mesoscutum without numerous hairs between dorsocentrals. Legs dark as in male; hairs on middle coxa and ventrally on femora more white, femora without anteroventral and posterior long black hairs; tibia I with dorsals as in male, only 2 very small ventrals; tibia II with a 4th large anterodorsal near basal 1/4, 2 very small posterodorsals and 2 or 3 additional short posteroventrals near 1/3 and 4/5; tibia III with posterior hairs shorter; tarsus I basitarsus without felted area of fine hairs and with scattered short spicules ventrally. Halter blackish brown as in male.

TYPE DATA.—Holotype ♂ and allotype ♀ from Dominica: Clarke Hall 15-19 Apr 1966 R. J. Gagné (USNM 72849). Paratypes from Dominica: 2 ♂ and 1 ♀ 24 Jan, 1 ♂ 14 Mar 1964 H. Robinson, 10 ♀ 5-17 Nov 1964 P. J. Spangler, 15 ♂ and 8 ♀ 16 May-7 June 1966 G. Steyskal, 2 ♀ 23 May 1966 R. J. Gagné, all Clarke Hall; 1 ♀ Rosalie River 28 Jan 1964, 2 ♂ and 1 ♀ South Chiltern Estate 7 Feb 1964 H. Robinson.

REMARKS.—The new species seems closest to *Condylostylus diffusus* (Wiedemann) in the almost completely dark legs and the black halter of both male and female. The most distinctive feature of the new species is the presence of black hairs on many parts, including the front, femora, and mesoscutum.

### *Condylostylus dominicensis*, new species

FIGURE 7

MALE.—Length 6.0 mm; wing 6.5 mm by 2.0 mm. Face bluish green with slight white pollen, broad, 4/5 as wide at clypeus as at antennae, wider than height of upper part of face, clypeus slightly higher than wide; front more violet with long white hairs above. Palpus black with 3 long black setae, pale hairs on margin; proboscis yellow. Antenna black; segment 2 with 1 long seta above, 1 much longer seta below; segment 3 shorter than high, scarcely pointed, arista from near end of dorsal edge. Lower postocular setae white.

Thorax metallic bluish green; pleura obscured with white pollen; 4 pairs of large acrostichals, 5 pairs of large dorsocentrals, 4 large scutellars.

Coxae and femora black with green reflections, former with slight white pollen, tibiae I and II and their basitarsi to near tips yellow, legs other-

wise brown. Most hair of coxae white, bristles black; coxa I with 2 large bristles distally, coxae II and III with large bristles single or lacking. Long white hairs ventrally on all femora, only 1 or 2 rows on femora II and III, white hair posteriorly on femur I and basal 1/2 of femur III, a few long black hairs anteroventrally and posteroventrally on all femora. Tibia I with 5 large posteroventrals rather evenly spaced, a small apical posterodorsally; tibia II with very small dorsal pair near base, 1 or 2 rather indistinct ventrals, 3 stout apicals of which 2 are rather long; tibia III with 2 small anterodorsals near basal 1/6 and near tip, posterior hairs being coarser and long in basal 1/2 and more erect and displaced near tip. Tarsus I basitarsus with 3 or 4 very small erect setae ventrally; tarsus II basitarsus anteroventrally with ca. 12 rather erect stout black setae having down-curved tips all about 3 times as long as width of basitarsus, anterior row of very close-set, narrow-stalked scales with series continued on segments 2 and 3, anterodorsal row of basitarsal hairs finer and more regular than others but not longer; tarsus III with last 2 segments flattened and nearly as broad as long, segment 3 about 4 times as long as apical width. Relative lengths of segments of legs from base as tibia I, 43; tarsus I, 47-14-10-6-4; tibia II, 60; tarsus II, 72-13-10-3-3; tibia III, 80; tarsus III, 48-15-8-5-4.

Wings with two transverse brown bands joined anteriorly between costa and vein 3, with only very faint, narrow connection along vein 4. Vein 2 nearly straight; vein 3 curving very gradually backward distally; anterior branch of vein 4 rather sharply bent near basal 1/3 or 1/4, then straight and ending near vein 3 slightly before wing tip. Crossvein twice as long as last of vein 5. Knob of halter yellow.

Abdomen metallic green with last segments partially violet, tergites with narrow black hind margins and broad black basal bands; rather long pale hairs on tergite 1 and sides of tergites 2 and 3; marginal bristles nearly as long as width of abdomen. Hypopygium (Figure 7) black with mostly blackish brown lamellae, lamella with many slender setae below and setae short and coarse on bilobed apex.

**FEMALE.**—Hairs on front shorter and only on upper part. Femora and basal 1/3 of hind tibia yellow, white ventral hairs of femora shorter; tibia

I with rather small anterodorsal near 1/5, 3 posteroventrals, 3 very small posterodorsals near 2/5, 3/5, and 4/5; tibia II with 1 rather large anterodorsal near 1/5, 2 small posterodorsals near 1/5 and 2/5, 3 slightly larger anteroventrals near 1/4, 1/2, and 3/4, only 1 distinct posteroventral near 3/5, 4 apicals; tibia III with 1 or 2 bristles on anterior surface near 1/2 or 2/3; tarsus II with only scattered short spicules below.

**TYPE DATA.**—Holotype ♂ from Dominica: Clarke Hall 31 May 1966 G. Steyskal (USNM 72850). Allotype ♀ from Dominica: Clarke Hall 7 June 1966 G. Steyskal. Paratypes from Dominica: 4 ♂ 17 Feb–11 Apr 1964 H. Robinson, 2 ♂ and 1 ♀ 28 Jan–10 Feb 1965 J. F. G. and T. M. Clarke, 2 ♂ 16 Feb 1965 cocoa trail, 2 ♂ and 2 ♀ 1–10, 21–31 Mar 1965, 1 ♀ 11–20 Mar 1965 light trap, all W. W. Wirth, 2 ♂ and 5 ♀ 13–27 Apr 1966 R. J. Gagné, 4 ♂ and 6 ♀ 14 May–12 June 1966 G. Steyskal, all Clarke Hall; 3 ♂ and 2 ♀ Rosalie River 28 Jan 1964 H. Robinson; 2 ♀ near Belfast 31 Jan 1964 H. Robinson.

**REMARKS.**—The new species belongs to the large group having distinctive series of small scales or fine setae on the middle basitarsi. The new species is distinct from most of its relatives by the lack of distinctive series of bristles on the middle tibiae.

### *Condylostylus quadriseriatus*, new species

FIGURE 8

**MALE.**—Length 5.8 mm; wing 5.7 mm by 1.8 mm. Face bluish green with white pollen below, broad, 4/5 as wide at clypeus as at antennae, about as wide as height of upper part of face, clypeus slightly higher than wide; front more violet, with mostly black hair at upper corners. Palpus black with 6 or more long black setae, white marginal setae; proboscis yellow. Antenna black; segment 2 with ca. 3 rather long setae above, longer setae below with 1 or 2 very long; segment 3 rounded, about as long as high, arista from distal 1/4 of dorsal edge. Lower postocular setae white.

Thorax metallic green, becoming more violet on scutellum; pleura with slight white pollen; 4 pairs of large acrostichals, 5 pairs of large dorso-centrals, 4 large scutellars.

Coxae and femora black with green reflections, former with slight white pollen, middle tibia yellow.

low at base becoming brownish toward middle, legs otherwise brown. Hairs of coxae mostly white, bristles black; fore coxa with 2 large bristles distally, middle and hind coxae with single large bristles. White hairs ventrally on femora and posteriorly toward bases of femora I and III, white hairs ventrally on femur II and particularly femur III rather long, rather long black setae anteroventrally and posteroventrally towards tips of all femora, being particularly numerous posteriorly on distal 1/2 of femur I and very few on femur III. Tibia I with 1 or 2 small posterodorsals near middle, 4 rather long bristles along basal 2/3 of posterior surface, only a very small apical; tibia II with rather small anterodorsals and posterodorsals nearly paired near 1/5 and 2/5, middorsal row with setae more erect and nearly as long as width of tibia, ca. 12 distinct setae in series along anteroventral surface all slightly longer than width of tibia, 2 distinct apicals; tibia III with 4 rather small anterodorsals near 1/5, 2/5, 3/5, and tip, hairs of posterior surface larger and more erect and disarranged near tip. Tarsus I with felt of very fine hairs ventrally on all segments, no spicules; tarsus II with 4 specialized rows of setae on basitarsus, anterodorsal series of ca. 45 rather erect setae about as long as width of basitarsus, midanterior surface with row of very fine, close-set, slender setae which are scarcely enlarged at tips, a second anterior row immediately beneath with shorter, closer-set, erect pale hairs, a series of ca. 10 larger erect setae anteroventrally that are slightly longer than width of basitarsus, segments 2-5 plain; tarsus III with last 3 segments short and flattened, nearly as wide as long. Relative lengths of leg segments from base as tibia I, 40; tarsus I, 44-15-10-6-4; tibia II, 46; tarsus II, 55-13-10-5-3; tibia III, 70; tarsus III, 38-11-4-5-5.

Wings with 2 transverse brown bands joined anteriorly between costa and vein 3, with only faintest trace of brown connection along vein 4. Vein 2 nearly straight; vein 3 curving very gradually backward distally; anterior branch of vein 4 rather sharply bent near basal 1/3 then straight and ending near vein 3 near but distinctly before wing tip. Crossvein twice as long as last of vein 5. Halter blackish brown.

Abdomen metallic green, tergites with narrow marginal and broad basal black band; white hairs

on tergite 1 and sides of tergites 2 and 3; marginal bristles as long as width of abdomen. Hypopygium (Figure 8) black, small, broader apically; lamella blackish brown, lanceolate, turned upward with reflexed slightly bilobed tip, inner tip with 3 short setae, outer edge with longer curved setae.

**FEMALE.**—Palpus with 4 or 5 distinct black setae; antennal segment 3 larger than in male and with distinct blunt point. Legs with femora, tibiae I and II and bases of basitarsi I and II yellow, all coxae and hind tibia distinctly black; femora with white hairs shorter; tibia I with small anterodorsal and small posterodorsal near base, small posterodorsal near middle, 2 slightly larger posteroventrals near 1/3 and 3/5; tibia II with 2 rather large anterodorsals near base and 3/5, small posterodorsals near base and 1/3, stout anteroventral and posteroventral near distal 1/3, 5 distinct apicals; tibia III with 4 or 5 distinct anterior setae near 1/6, 1/3, 1/2, 2/3, and tip, posterior hairs short; all tarsi plain, fore and middle basitarsi with scattered, very short, rather erect spicules ventrally. Relative lengths of leg segments as tibia I, 37; tarsus I, 31-10-8-5-4; tibia II, 50; tarsus II, 40-11-9-5-3; tibia III, 68; tarsus III, 30-10-7-4-4. Knob of halter yellow.

**TYPE DATA.**—Holotype ♂, 5 ♂, and 2 ♀ paratypes from Dominica: Rosalie River 28 Jan 1964 H. Robinson (USNM 72851). Allotype ♀, 4 ♂, and 1 ♀ paratypes from Dominica: Clarke Hall 24 Jan 1964 H. Robinson. Additional paratypes from Dominica: 1 ♂ 18 Jan 1965 cocoa trail, W. W. Wirth, 1 ♀ 6 Feb 1965 J. F. G. and T. M. Clarke, 1 ♂ 27 Apr 1966 R. J. Gagné, 1 ♂ and 1 ♀ 11-31 May 1966 G. Steyskal, all Clarke Hall; 2 ♂ South Chiltern Estate 7 Feb 1964 H. Robinson; 1 ♂ Rosalie River 17 Feb 1964 H. Robinson; 1 ♂ Syndicate Estate 5 Mar 1964 D. F. Bray; 1 ♂ Merville Hall Airport 28 May 1966 G. Steyskal.

**REMARKS.**—This new species, like the preceding one, is in the large group having distinctive series of small scales or fine setae on the middle basitarsi. The species seems close to *Condylotylus triseriatus* (Aldrich) of Mexico and Brazil, but the latter has longer-stalked scales on the basitarsus and second segment of the middle tarsus and has at least the fore and middle tibiae yellow. The somewhat enlarged third segment of the female antenna of the new species seems distinctive.

### Genus *Sciapus* Zeller

Medium sized and often rather elongate with metallic green or partly yellowish body, black or yellowish setae. Head as wide as high or wider, with vertex deeply excavated; front very broad, broader above, without fine hairs on upper corners; face usually broad and metallic with slight to dense pollen, usually narrowed slightly below, rarely very narrow, without long hairs. Pseudotracheae unsclerotized. Antennae with subequal segments, segment 1 bare above, segments 1 and 2 truncate apically, arista usually dorsal, rarely apical, about as long as thorax. Postocular setae multiseriate.

Thorax with mesoscutum usually very broad, with acrostichal setae usually biseriate and as large as dorsocentrals, thorax sometimes narrower with smaller acrostichals, 5 or 6 pairs of dorsocentrals with anterior 4 pairs often very small, scutellum with 1 or 2 pairs of large bristles, without or with 1 distinct seta over fore coxa. Anterior coxa with many hairs and middle coxa with few hairs anteriorly, both coxae with bristles distally, hind coxa with external bristle and a few small hairs. Femora without preapical bristles; distal segments of tarsi usually slightly widened.

Wings usually elliptical with prominent anal and basal lobes, male wing sometimes lacking anal lobe or angled at tip of vein 2. Costa with or without special fringe of curved setae; vein 2 usually rather straight, vein 3 curving backward distally and ending just before vein 4, vein 4 forked in last part, anterior branch directed sharply forward and then strongly arched or sharply bent and running to wing tip, posterior branch not reaching wing margin. Crossvein oblique, much longer than last of vein 5; vein 6 represented by slight fold. Calypter usually with pale setae.

Abdomen of male over 1.5 times as long as thorax, narrowly cylindrical, curving downward, tergite with very large erect marginal bristles. Hypopygium rather small, seated on tip of pre-abdomen; lamellae slender, rodlike; aedeagus distinct from near base of upper surface of capsule. Female genitalia with few dornen.

The genus is nearly worldwide in distribution. The species are usually found on foliage in rather moist habitats. The following four species are known from Dominica. A female of a fifth species has been seen which resembles *Sciapus flavicornis* (Aldrich) of St. Vincent and Grenada, but the Dominican specimen seems distinct by the brown bristles at the tip of the fore coxa.

### Key to the Species of *Sciapus* in Dominica

1. Arista apical; costa of male wing not fringed with long setae ..... *S. unifasciatus*  
Arista dorsal; costa of male wing fringed with long setae ..... 2
2. Thorax mostly yellow with middorsal metallic stripe; bristles of coxae mostly black; cilia on costa of wing S-shaped ..... *S. luteus*  
Thorax mostly metallic green, hind margin sometimes yellow; all setae of coxae pale; cilia on costa of wing J-shaped ..... 3
3. Antennal segment 1 yellow; male fore tibia and fore tarsus without long setae, dorsal setae scarcely longer than width of segments ..... *S. bredini*  
Antenna wholly brown; fore tibia and tarsus of male fringed dorsally with numerous long stout curved setae ..... *S. decoripes*

### *Sciapus unifasciatus* (Say)

*Dolichopus unifasciatus* Say, 1823:83.

MALE.—Length ca. 5.0 mm; 5.2 mm by 1.9 mm. Face 2/3 as wide below as above with yellowish pollen increasing in lower 1/2, upper face and front bright metallic green; front slightly narrower than upper part of face, not broader above. Palpus

and proboscis yellow. Antenna with basal two segments yellow; segment 3 black, short-triangular, slightly longer than high, arista apical. Lower postocular seta white.

Thorax metallic bright green with slight yellowish pollen above, denser whitish pollen on pleura, narrow hind margin of pleura yellow. Acrostichals rather long, 4 pairs, rows close to-



gether; 6 pairs of dorsocentrals, first 4 pairs small; scutellum with large pair of bristles and smaller seta on side.

Legs including coxae mostly yellow, slight infuscation externally on middle coxa, tarsi brownish from tip of basitarsi. Fore coxa with 3 large apical bristles, setae of all coxae pale. Femora, fore and hind tibiae, fore tarsus and most of hind tarsus plain. Relative lengths of leg segments from base as tibia I, 38; tarsus I, 33-12-8-6-3; tibia II, 55, with 2 small apicals, hairs more erect than on other tibiae; tarsus II, 39-16-14-8-5, segments with hairs more erect, basitarsus with a row of larger coarse hairs below with ca. 7 slightly larger setae interspersed; tibia III, 70, with 2 small apicals anteriorly and ventrally; tarsus III, 31-17-11-7-4, basitarsus slightly bulging posteroventrally and bearing a distinct small seta.

Wing clear, narrowly oblong with prominent anal and basal lobes. Costa without fringe of longer setae; tips of veins 3 and 4 ending well back on rather truncate wing tip; anterior branch of vein 4 rather abruptly bent in basal 1/3. Crossvein over twice as long as last of vein 5. Halter yellow.

Abdomen mostly metallic green with slightly yellowish pollen, tergite 1 and base and sides of tergite 2 yellow, marginal bristles and pale long setae on sides of tergites about 1/3 as long as width of abdomen. Hypopygium brown; lamellae yellowish with short pale setae.

**FEMALE.**—Length ca. 4.0 mm; 4/5 as wide below as above. Mesoscutal bristles shorter but stouter than in male, 3 or 4 pairs of acrostichals; 5 pairs of dorsocentrals, anterior 3 not so much smaller. Tibiae II and III with small anterodorsal near basal 1/4. Lengths of leg segments from base as tibia I, 25; tarsus I, 20-8-5-3-2; tibia II, 32; tarsus II, 28-11-8-4-2; tibia III, 45; tarsus III, 17-12-9-4-2. Yellow part of abdomen extending back along side of tergite 3.

**COLLECTION DATA.**—Dominica: 5 ♀ near Layou 27 Jan-12 Feb 1964 H. Robinson; 1 ♀ Fond Colet 5-9 Oct 1964 P. J. Spangler.

**REMARKS.**—A number of females have been seen from Dominica having the characteristic apical arista of the species. The description of the male is taken from specimens from the eastern United States, where the species is widely distributed.

### *Sciapus luteus*, new species

FIGURE 9

**MALE.**—Length 4.2 mm; wing 4.7 mm by 1.4 mm. Body mostly yellow with setae mostly black. Face and front dark bluish green, sometimes more brownish on clypeus; face with sparse whitish pollen, about 2/5 as wide at clypeus as at antennae. Palpus and proboscis yellow, former with 2 prominent black setae. Antenna yellow at base, brownish from tip of segment 2; segment 2 with short setae; segment 3 ovate, bluntly pointed, slightly longer than high, arista from distal 1/3 of upper edge. Lower postocular setae white.

Thorax mostly yellow with metallic bluish green above on scutellum and between rows of acrostichals, small bluish spot in lateral depression of mesoscutum; whitish pollen on pleura; 3 large pairs of acrostichals, 6 pairs of dorsocentrals with anterior 4 pairs very small and hairlike; scutellum with 1 large pair of bristles and a small hairlike seta on side.

Legs yellow with tarsi somewhat brownish from tips of basitarsi, last tarsal segments brown. Bristles of coxae including 3 on tip of fore coxa black, hairs on anterior surface of fore coxa and ventrally on femora pale, hairs of legs otherwise black; 3 or 4 short setae along outer anterior surface of fore coxa rather stiff. Tibiae I and III with small anterodorsals near basal 1/4, tibia III with double row of more-erect curved seta forming small crests near tip of posterior surface, distinct apical seta anterodorsally. Relative lengths of leg segments from base as tibia I, 32; tarsus I, 44-13-8-6-2.5, basitarsus with ca. 5 rather erect ventral setae; tibia II, 50; tarsus II, 37-23-13-7-3, pulvilli somewhat enlarged; tibia III, 68; tarsus III, 35-15-9-6-2.5, basitarsus with 1 or 2 small setae posteriorly; tarsus I segments 1-3 and tarsus II segments 2 and 3 with small dorsal combs at tips similar to but smaller than sex comb of hind basitarsus.

Wing clear, narrowly oblong with prominent anal and basal lobes. Costa (Figure 9) with 2 rows of long setae, lower row of many longer S-shaped setae. Vein 2 nearly straight; anterior branch of vein 4 rather strongly curved at basal 1/3 and ending in wing tip. Crossvein over twice as long as last of vein 5. Halter yellow.

Abdominal tergites 5 and 6 and hind margins of tergites 1-4 bright metallic green, most of tergites 1-4 yellowish; ventral setae brownish, other setae black; marginal bristles about as long as width of abdomen. Hypopygium and lamellae brownish yellow, latter with rather short, dark hairs.

**FEMALE.**—Face bluish green with sparse pollen,  $1/2$  as wide below as at antennae. Thorax with 4 pairs of large dorsocentrals. Fore coxa with 2 short stout pale setae on outer anterior edge at base, some hairs on inner anterior surface near base stiffer and black; tibia II with 1 large antero-dorsal and 1 smaller posterodorsal near basal  $1/4$ , small middorsal near distal  $1/3$ , 1 small antero-ventral near  $1/2$ , 2 small posteroventrals near basal  $1/3$  and  $3/5$ , tibia III without crests posteriorly near tip; fore and middle tarsi without small apical crests, middle tarsus without enlarged pulvilli. Wing without long setae on costa. Abdomen with only triangular green areas on mid-dorsum of tergites 3 and 4, which are wider toward hind margins, tergites 1 and 2 completely yellow except for black hind edges; marginal setae rather short except on sides of tergite 1.

**TYPE DATA.**—Holotype ♂ from Dominica: Clarke Hall 17 Feb 1964 H. Robinson (USNM 72852). Allotype ♀ and 2 ♀ paratypes from Dominica: Clarke Hall 13 Apr 1966 R. J. Gagné. Additional paratypes from Dominica: 10 ♂ and 4 ♀ 23 Jan-28 Feb 1964 H. Robinson, 1 ♂ and 3 ♀ 21 Feb-31 Mar 1965 light trap, W. W. Wirth, 1 ♂ and 2 ♀ 13-19 Apr 1966 R. J. Gagné, 3 ♂ and 2 ♀ 30 May-8 June 1966 G. Steyskal, all Clarke Hall; 1 ♀ Clarke Hall, 1 mile east, 19 Apr 1965 D. R. Davis; 1 ♂ and 2 ♀ Clarke Hall, Manets Gutter 1-7 Mar 1965 W. W. Wirth; 1 ♂ and 1 ♀ 7 Feb 1964 H. Robinson, 3 ♀ 8-10 Dec 1964 P. J. Spangler, 1 ♀ 2 Feb 1965 W. W. Wirth, 1 ♂ and 1 ♀ 2 Nov 1966 A. B. Gurney, all South Chiltern Estate; 5 ♂ Rosalie River 28 Jan 1964 H. Robinson; 1 ♂ La Ronde River 18 Feb 1964 H. Robinson; 1 ♂ 1.5 miles east Loubiere 3 Nov 1966 A. B. Gurney.

**REMARKS.**—The new species is like two other species found in the West Indies in having a yellow thorax with a median dorsal bluish green stripe. *Sciapus dorsalis* (Loew) of the eastern United States and Cuba differs by its long male fore basitarsus, the fore coxa with a row of black

hairs on the inner margin, the J-shaped cilia of the anterior wing margin, and the third antennal segment pale and shorter than high. *Sciapus flavidus* (Aldrich) of St. Vincent and Grenada differs by the fore coxa having a row of black hairs along the inner margin, the fore femur with a crest of six setae below near the base which is very prominent in the female, the middle tibia and basitarsus with two rows of anteriorly directed long hairs, the costa of the wing with shorter, simply curved hairs, and the third antennal segment being scarcely as long as high.

### *Sciapus bredini*, new species

FIGURE 10

**MALE.**—Length 6.5 mm; wing 6.2 mm by 1.9 mm. Front and face metallic bluish green with violet reflections, face  $3/5$  as wide at clypeus as at antennae, with sparse grayish pollen. Palpus and proboscis yellow, former with 2 black setae. Antennal segment 1 yellow, segments 2 and 3 brown; segment 2 with slightly longer seta above; segment 3 ovate-triangular, slightly longer than high, arista from beyond middle of dorsal edge. Lower postocular setae white.

Thorax metallic green; mesoscutum and scutellum with violet reflections above at least when dry, with very slight brownish pollen; whitish pollen on pleura, narrow hind margin of pleura sometimes partly yellow; 3 or 4 large pairs of acrostichals, 6 pairs of dorsocentrals, last 2 pairs large, anterior 4 pairs hairlike; 1 large pair of scutellars, hairlike seta on side.

Legs mostly yellow, outer surface of middle coxa, tarsi I and II from tip of basitarsi, and hind leg from tip of tibia brown. Bristles of coxae and ventral setae on bases of femora pale, other setae of legs including hairs anteriorly on fore coxa mostly black, 3 apical bristles of fore coxa rather slender. Femur II with series of ca. 12 long setae along distal  $1/2$  of posterior surface, ca. 10 shorter black setae distally along anteroventral surface. Tibia I with row of close-set small anterodorsals all about as long as width of tibia; tibia II very slightly sinuous, distinct anterodorsal near base, with short denser setosity along anterior surface, posterior surface with hairs longer and more erect, some nearly as long as width of tibia; tibia III

with very distinct anterodorsal near basal 1/4, scattered, more erect, longer setae along postero-dorsal and posteroventral surfaces, numerous dense, erect, slightly broad-tipped hairs posteriorly on distal 1/4, 1 distinct apical anteroventrally. Hairs of tarsi I and II slightly more erect, anterior hairs of basitarsus I very dense, longer than width of segment and swept upward at tips, a few scattered, more erect setae ventrally; basitarsus II with hairs of anterior surface slightly finer and denser, pulvilli somewhat enlarged; basitarsus III plain except for rather distinct setae posteriorly at base and more erect setae posteriorly along basal 1/2. Relative lengths of leg segments from base as tibia I, 45; tarsus I, 53-11-11-7-4; tibia II, 55; tarsus II, 58-20-16-8-4; tibia III, 80; tarsus III, 45-19-13-7-4.

Wing oblong-elliptical, very slightly tinged anteriorly toward tip, otherwise clear with brown veins, anal and basal lobes prominent. Costa (Figure 10) with 1 row of rather short, close-set, J-shaped setae extending from basal to distal 1/4. Vein 2 curved slightly backward distally; anterior branch of vein 4 strongly arched in basal 1/3 or 1/4, ending in narrowly rounded wing tip. Crossvein nearly 3 times as long as last of vein 5. Knobs of halteres a slight brownish yellow.

Abdomen with tergites 2-7 metallic green with broad basal bands and narrow marginal bands blackish, extreme base of tergite 2 along with sides of tergites 2 and 3 and basal sternites partly yellow; lateral and ventral hairs of basal tergites and sternites pale; marginal setae 1/2 to 3/4 as long as width of abdomen, longer on sides of basal tergite. Hypopygium black; lamella brown with fine dark setae.

**FEMALE.**—Face 3/4 as wide at clypeus as above. Thorax with 5 large dorsocentrals; hind margin of pleura usually yellow. Apical bristles of fore coxa slightly more prominent, fewer black hairs on anterior surface; femur II with very short setae in posterior series; tibia I with 1 short anterodorsal near basal 1/5, no other distinctive dorsal hairs or bristles; tibia II with 1 distinct anterodorsal and 1 small posterodorsal near basal 1/4, a small middorsal and 1 small ventral near 1/2; tibia III without erect broad-tipped hairs posteriorly near tip; tarsi plain except for spicules ventrally on basitarsi I and II; lengths of segments as tibia I, 38; tarsus I, 40-9-9-5-4; tibia II, 50;

tarsus II, 45-15-11-5-4; tibia III, 68; tarsus III, 30-16-11-6-4. Costa of wing without longer setae. Abdomen with black bands and marginal setae less prominent.

**TYPE DATA.**—Holotype ♂ from Dominica: Clarke Hall 25 Feb 1964 H. Robinson (USNM 72853). Allotype ♀, 3 ♂ and 1 ♀ paratypes from Dominica: Clarke Hall 28 Feb 1964 H. Robinson. Additional paratypes from Dominica: 1 ♀ 11 Mar 1964 H. Robinson, 1 ♂ 5-11 Nov 1964 P. J. Spangler, both Clarke Hall.

**REMARKS.**—This new species belongs to the large group having distinctive setae on the anterior margin of the male wing. The new species is reminiscent of *Sciapus bradleyi* Van Duzee of the southeastern United States in having a slightly distorted middle tibia. The Van Duzee species is clearly distinguished by the distinct patch of erect hairs on the mesoscutum and the more sharply rounded apical margin of the wing.

### *Sciapus decoripes*, new species

FIGURES 11-13

**MALE.**—Length 5.5 mm; wing 5.4 mm by 1.5 mm. Front and face metallic bluish green with violet reflections, face with whitish pollen, 1/2 as wide at clypeus as at antennae. Palpus dark yellow with 2 black bristles; proboscis pale yellow. Antenna dark brown; segment 2 with somewhat longer seta above; segment 3 triangular, about as long as high, arista from middle of dorsal edge. Lower postocular setae white.

Thorax metallic green or bluish green, with violet above on mesoscutum and scutellum at least when dry, with sparse brownish pollen; whitish pollen on pleura; 3 large pairs of acrostichals; 6 pairs of dorsocentrals, last 2 pairs large, anterior 4 pairs hairlike; 1 large pair of scutellars, 1 hair-like seta on side.

Legs mostly yellow, outer surface of middle coxa and most of tarsi darkened, fore leg gradually darker from base of basitarsus, middle leg darker from tip of basitarsus, hind leg gradually darker from near base of tibia. Hairs and bristles of coxae and ventrally on femora pale, setae of legs otherwise black. Fore coxa without distinctive setae, 3 apical bristles rather slender. Femur I with somewhat longer hairs posteriorly and pos-

teroventrally in basal  $1/2$ ; femur II with series of ca. 12 longer setae along distal  $1/2$  of posterior surface. Tibia I with 2 rows of prominent curved setae, smaller anterodorsal row of ca. 15 and more middorsal row with ca. 6 setae all more than twice as long as width of tibia, next posterior row of only slightly enlarged setae, rows starting near prominent anterodorsal at basal  $1/6$  and continuing on tarsus. Tibia II with setae mostly rather erect, dorsally with 2 or 3 rows of setae as long as width of tibia with those in basal  $1/2$  somewhat longer, a large curved dorsal near basal  $1/5$ , ventrally a prominent series of ca. 15 curving setae, setae near base 3 times as long as width of tibia with others gradually shorter and merging into smaller erect curved hairs in distal  $1/3$ ; tibia III with distinct small anterodorsal near basal  $1/4$ , posterior and posterodorsal rows of hairs more erect and slightly longer, median posterior row of hairs more erect and with slightly widened apices, latter row continuing on base of basitarsus, a small apical bristle anterodorsally. Tarsus I (Figure 13) with fringe of setae continued on segments 1-4, longest setae in series at tips of segments 1-3, especially 2, basitarsus with a few more erect hairs along ventral surface; tarsus II with hairs more erect, those of basitarsus gradually longer toward base on anterior and to some extent on lateral surfaces, pulvilli slightly enlarged; tarsus III rather plain except longer, more erect hairs posteriorly on basal  $1/2$  of basitarsus. Relative lengths of leg segments from base as tibia I, 40; tarsus I, 50-13-8-6-3; tibia II, 50; tarsus II, 45-20-10-5.5-3; tibia III, 70; tarsus III, 40-15-10-6-2.5.

Wing very slightly infuscated anteriorly, otherwise clear with brown veins, narrowly elliptical with prominent anal and basal lobes. Costa (Figure 12) with 1 very prominent row of close-set J-shaped setae along basal  $1/2$ , short setae in more dorsal row along basal  $1/4$ . Vein 2 curving slightly backward distally; anterior branch of vein 4 bending quite sharply near basal  $1/4$ , curving forward distally and ending in narrowly rounded wing tip. Crossvein over 3 times as long as last of vein 5. Knob of halter brownish yellow.

Abdominal tergites 2-6 mostly metallic green with basal halves and narrow distal margins black, area behind tergite 1 with distinct white pollen, tergite 7 brownish with green reflections; ventral setae of first 4 segments pale; marginal setae of

tergites very prominent, as long as width of abdomen. Hypopygium and lamella (Figure 11) dark brown, latter with rather long, black hairs.

**FEMALE.**—Face  $3/5$  as wide below as above. Thorax with 5 large pairs of dorsocentrals; narrow hind margin of pleura yellow. Apical 3 bristles of fore coxa more prominent; fore femur without longer posterior hairs, posterior series of femur II with very short setae; tibia I with smaller dorsal near base, without other dorsals; tibia II with 1 rather large anterodorsal and 1 small posterodorsal near basal  $1/4$ , a small middorsal before  $1/2$ , 1 small ventral beyond  $1/2$ , 4 or 5 distinct apicals; tibia III with anterodorsal near basal  $1/4$ , very small, irregular posterodorsals and ventrals; tarsi I and II with scattered, slightly longer hairs ventrally on basitarsi, tarsi otherwise without special hairs; relative lengths of leg segments as tibia I, 35; tarsus I, 39-10-7-4-3; tibia II, 47; tarsus II, 38-12-8-5-3; tibia III, 65; tarsus III, 30-14-9-6-3. Wing more broadly elliptical, 4.6 mm long by 1.5 mm wide; costa without longer setae; anterior branch of vein 4 bent near basal  $1/3$ ; crossvein scarcely 3 times as long as last of vein 5. Abdomen without black bands, bases of tergites 1 and 2 and sides of tergites 2-4 yellow, sternites yellow; marginal setae short.

**TYPE DATA.**—Holotype ♂ from Dominica: Clarke Hall 11 Mar 1964 H. Robinson (USNM 72854). Allotype ♀ and 2 ♂ paratypes from Dominica: Clarke Hall 25 Feb 1964 H. Robinson. Additional paratypes from Dominica: 1 ♂ 20 Feb, 1 ♂ and 2 ♀ 28 Feb, 1 ♂ and 1 ♀ 14 Mar, 1 ♂ 11 Apr 1964 H. Robinson, 1 ♀ 14 Feb 1964 D. F. Bray, 3 ♀ 16-31 May 1966 G. Steyskal, all Clarke Hall; 1 ♀ near Belfast 31 Jan 1964 H. Robinson; 1 ♂ Fond Figs River 25 Jan 1965 W. W. Wirth.

**REMARKS.**—The new species is another in the large group having a ciliated anterior margin on the male wing. The most distinctive feature of the species is the very prominent fringe of large dorsal setae on the fore tibia and tarsus of the male. The species is also the only member of the genus in Dominica with the antenna wholly dark.

### Genus *Leptorhethum* Aldrich

Small to medium sized with slender metallic green or partly yellowish body, setae mostly dark. Head rather rounded with vertex scarcely exca-

vated from anterior view; front broad, broader above, without fine hairs on upper corners; face rather narrow or sometimes obliterated in middle, without hairs. Pseudotracheae not known. Antennae with subequal segments, segment 1 bare above, segments 1 and 2 truncate apically; arista usually dorsal just above apex or apical, about  $2/3$  as long as thorax. Postocular setae sparsely multiseriate.

Thorax with mesoscutum rather narrow, rather evenly rounded posteriorly; some acrostichal setae present in male, biseriate, weaker or lacking in female; 4–6 pairs of dorsocentrals; scutellum with 1 pair of bristles, no lateral hair; no distinct setae above fore coxa. Fore and middle coxae with only small hairs anteriorly, a few longer setae at tips; hind coxa with 1 external bristle. Femora without preapical bristles, fore femur sometimes with large ventral setae near base. Tarsi slender.

Wings narrowly elliptical, widest near distal  $1/3$ , anal lobe shallowly rounded, basal lobe obsolete. Costa without fringe of special setae; vein 2 only slightly curved; vein 3 curving distinctly backward near tip, ending near tip of vein 4; vein 4 forked in last part, anterior branch directed sharply or obliquely forward, becoming nearly parallel with tip of vein 2, ending at tip of wing, posterior branch not reaching wing margin; crossvein slightly oblique, about as long as last of vein 5; vein 6 represented by very slight fold. Calypter with rather pale setae.

Abdomen of male over 1.5 times as long as thorax, narrowly cylindrical, curving downward; tergites with rather small marginal bristles. Hypopygium rather narrowly cylindrical, extending forward under segments 6 and 7 of preabdomen; lamellae oval to oblong, aedeagus free from near base of upper surface of capsule. Female genitalia with few dornen.

The genus is widely distributed with species known from both the West Indies and Argentina, but the species seem to be uncommon and are rarely collected. Only two species have been described previously, though many other species undoubtedly exist. Material of at least two additional species have been seen from the West Indian region.

*Leptorhethum* has the combination of branched fourth wing vein and unexcavated vertex of the head similar to *Psilopiella* Van Duzee. The latter

genus, based on a single female specimen, was distinguished by Van Duzee (1931a) by the lack of acrostichals, the presence of a distinct depressed area before the scutellum, and the posterior branch of the fourth wing vein being represented by only a fold. The acrostichal setae prove to be an unreliable distinction, and the other stated differences need further evaluation on the basis of more material. Still, examination of the type of *Psilopiella* (loaned through the courtesy of Paul Arnaud, Jr., of the California Academy of Sciences) indicates the genus may well be distinct, having a crossvein only about half as long as the last part of the fifth vein and having a rather distinct clypeus bearing many, very minute hairs. It is not certain that *Psilopiella* is in the Sciapodinae, and Van Duzee did suggest it might be closer to *Neurigona*.

Only one species of *Leptorhethum* is known from Dominica.

#### *Leptorhethum dominicense*, new species

FIGURES 14–16

MALE.—Length 3.0 mm; wing 2.6 mm by 0.8 mm. Eyes contiguous below; face obliterated in middle with nearly equal-sized triangles above and below, metallic green, lower part with whitish pollen; front metallic green. Palpus and proboscis yellow, former with only tip visible, bearing 1 black apical bristle. Antennal segments 1 and 2 yellow; segment 3 black, rounded with very blunt tip, arista inserted just above tip. Lower postocular setae white.

Thorax with scutellum and most of mesoscutum bright metallic green, lateral margins to base of scutellum and lateral  $1/3$  before transverse suture along with pleura yellow. Acrostichals almost completely absent, specimen showing only 1 distinct seta anteriorly, a few others possibly lost; dorsocentrals 4 pairs, pairs 1, 2, and 4 large, pair 3 small and widely separated from pair 2; scutellum rather pointed in middle of hind margin.

Legs including coxae, femora, tibiae, and basal 2 or 3 segments of all tarsi yellow; legs all very long. Anterior hairs of coxae pale and scarcely noticeable, apical setae of coxae dark. Femur I (Figure 16) with 2 long setae close together ventrally near base, each  $1/2$  or more as long as femur, more basal of setae thinner with longer, more



slender tip, the femur very narrowed in apical 1/3. Legs otherwise without distinctive setae. Relative lengths of leg segments from base as coxa I, 30; femur I, 40; tibia I, 25; tarsus I, 27-11-10-6-2.5, segment 4 dark in basal 1/2, white on distal 1/2, segment 5 black, 2/3 as broad as long; tibia II, 37; tarsus II, 31-11-rest broken; tibia III, 47; tarsus III, 18-14-8-rest broken.

Wing (Figure 14) clear with brownish veins. Vein 2 scarcely curving backward; vein 3 not recurving distally, convergent with vein 4 at tip, separated by 1/2 as much as their separation at bend of anterior branch of vein 4; anterior branch of vein 4 at near 90° angle with basal part of vein, rather sharply curved near basal 1/5; posterior branch distinct for only 1/5 as far as anterior branch, not reaching margin. Crossvein slightly longer than last of vein 5. Calypter margin dark. Knob of halter slightly brownish yellow.

Abdomen mostly yellowish, slightly brownish along hind margin of tergite 1, tergites 2-5 with brownish pattern of bands along fore and hind margins connected along middorsum, the pattern very faint on tergites 2 and 3, tergite 6 very elongate, forming capsule-like structure with metallic green reflections. Hypopygium (Figure 15) yellow; lamellae narrowly oval, brownish yellow with long pale marginal hairs and a rounded transparent (?) spot in center.

**FEMALE.**—Face narrowed only to 1/2 of upper width with straight sides most of length, dark brown or violet; antennal segment 3 with arista essentially apical. Fore femur with only a very short erect black seta ventrally near base ca. 1/3 as long as width of tibia; legs except 5th segments of tarsi yellow; lengths of leg segments as tibia I, 18; tarsus I, 15-7-5-3-2, last segment narrow; tibia II, 25; tarsus II, 20-7-5-3-2; tibia III, 30; tarsus III, 11-9-5-3-2. Abdomen with tergites 2 and 3 darker and pattern on tergite 2 broader, leaving only a small yellow spot laterally.

**TYPE DATA.**—Holotype ♂ from Dominica: Dleau Gommier 17 Mar 1956 J. F. G. Clarke (USNM 72855). Allotype ♀ from Dominica: Fond Figues River, 400' 12 Apr 1966 R. J. Gagné.

**REMARKS.**—The new species is distinct from others of the genus by the yellow pleura and hypopygium, the fewer dorsocentral setae, the ornamented last segments of the fore tarsus, and the very long ventral setae of the male fore femur.

## Subfamily NEURIGONINAE

### Genus *Coeloglutus* Aldrich

Medium sized with mostly metallic green, slightly thickened body. Face long, narrow, pollinose; front small, not wider above, slightly wider than high. Antennal segment 1 bare; segment 2 with distal lobe extending along inside of segment 3, with submarginal row of comblike setae with those above much stronger; arista subapical. Postocular setae uniseriate, whitish.

Thorax long; mesoscutum with long flattened area posteriorly, anteriorly covered with numerous small setae; up to 12 pairs of acrostichals, only hind pairs very long; 2 or 3 hind pairs of dorsocentrals very long; scutellum with 2 widely separated bristles, 1 minute seta on outer margin. Only a few pale setae below on proepisternum. Fore and middle coxae with numerous hairs anteriorly, hind coxa with 1 large external seta; femora without preapical setae; last segment of male fore tarsus with 1 hooked claw opposing modified base.

Wing elongate-oval. Vein 2 gently curved, at tip curved very slightly forward; veins 3 and 4 generally convergent nearer tip but turning backward and parallel at tip; crossvein a little less than perpendicular to base of vein 4, less than 1/2 as long as last of vein 5; vein 6 represented by very slight fold. Setae of calypter pale.

Abdomen slightly flattened. Hypopygium small, scarcely extending forward under tip of preabdomen, with only small appressed appendages.

**REMARKS.**—The genus of two described species seems close to *Neurigona* in many basic features but has very different appearance and habitat. The only female specimen seen in the study has genitalia obscured by debris but the structure is very slender and shows no indication of dornen.

Only one species of *Coeloglutus* is known from Dominica.

### *Coeloglutus concavus* Aldrich

*Coeloglutus concavus* Aldrich, 1896:338.

**MALE.**—Length 2.5 mm; wing 2.8 mm by 0.9 mm. Setae mostly black. Face as wide as antennal segment 3, whitish pollinose; front metallic green with whitish pollen. Palpus and proboscis yellow. Antenna segments 1 and 2 yellow, segment 3

blackish, about as long as high, very slightly produced below arista.

Thorax dark metallic green, slight grayish pollen on mesoscutum, thicker gray pollen on pleura.

Legs mostly yellowish, fore coxa with anterior surface sometimes infuscated, middle and hind coxae mostly brownish, side of hind coxa pale; tips of middle and hind tibiae and last 2 segments of fore tarsus brown, middle tarsus from tip of basitarsus and all of hind tarsus brownish. Fore femur with minute dark setae in ventral row, setae directed posteriorly. Tibia II with 2 distinct anterodorsals at 1/4 and 3/5, 1 small posterodorsal near 1/4; tibia III with many very small dorsals and smaller ventrals. Relative lengths of leg segments from base as tibia I, 50; tarsus I, 30-20-9-4-6, last segment with 1 modified claw; tibia II, 60; tarsus II, 38-18-10-4-5; tibia III, 65; tarsus III, 12-20-10-5-6.

Wing faintly yellowish, veins brown.

Abdomen dark with deep violet color toward hind 1/2 of each tergite, patches of greenish surface with whitish pollen and pale setae on anterior lateral corners of tergites. Hypopygium brown.

COLLECTION DATA.—Dominica: 1 ♂ Fond Figues River on wet undercut surface of rock at edge of river 16 Mar 1964 D. L. Bray; 1 ♀ Pont Casse 22 Nov 1964 P. J. Spangler.

REMARKS.—The species is presently known only from St. Vincent, Dominica, and Puerto Rico.

### Genus *Neurigona* Rondani

Large to medium sized with rather elongate body and legs, setae mostly dark. Face narrow,

sometimes obliterated below by contiguous eyes, pollinose, somewhat broader in female, without distinct transverse suture; front broad, much broader above. Pseudotracheae 6, unsclerotized. Antenna with all 3 segments short; segment 1 bare above; segment 2 truncate apically or slightly produced inside; segment 3 somewhat laterally compressed, arista dorsal or subapical. Head strongly excavated behind vertex. Postocular setae uniseriate.

Thorax metallic bluish or green, blackish, or yellowish; mesoscutum distinctly and strongly flattened on posterior slope, flattened area often of different color and weaker so as to be almost always destroyed by pin; acrostichals small, biseriate; dorsocentrals distinctly enlarged, 5-8 pairs; scutellum with 2 large bristles, a small hair on lateral margin; 1 long seta over fore coxa. Fore coxa elongate with numerous hairs anteriorly and bristles apically, hind coxa with 1 external bristle. Femora without preapicals; fore or middle tarsi sometimes ornamented.

Wing usually narrowly oval; veins 2 and 3 diverging distally; vein 4 usually distinctly flexed in last part and convergent with vein 3 distally; cross-vein usually perpendicular to base of vein 4, shorter than last of vein 5; vein 6 represented by long fold.

Abdomen narrow, tapering, metallic bluish or greenish or black-banded or yellow. Hypopygium large, borne on or under tip of preabdomen, not reaching very far forward, without prominent outer lamellae. Female genitalia with no dornen.

REMARKS.—Adults of *Neurigona* are commonly found stationed on the vertical surfaces of smooth tree trunks. In Dominica the genus has been found

### Key to the Species of *Neurigona* in Dominica

1. Thorax metallic green, abdomen with prominent white pollen on sutures; middle basitarsus without large seta posteriorly at base, hind basitarsus 1/2 as long as following segment, segments 3 and 4 of male fore tarsus slightly ornamented ..... *N. thoracica*  
Thorax yellow with posterior slope of mesoscutum and disk of scutellum green, abdomen without prominent pollen; middle basitarsus with large seta posteriorly at base, hind basitarsus 3/5 as long as following segment, fore tarsus of male plain ..... 2
2. Hind tibia without anteroventral seta near base, with only posterodorsals, middle tibia with 1 large anteroventral but only small posteroventrals; wings brownish anteriorly, especially in male; male abdomen blackish only on tergites 2 and 3 or slightly on 4 ..... *N. fuscicosta*  
Hind tibia with anterodorsal seta near base, middle tibia with large anteroventral and ventral setae; wings not distinctly brownish anteriorly; male abdomen blackish on tergites 2 through 5 ..... *N. signifer*

most often on vertical cement surfaces, particularly on the sides of one old cistern on the Clarke Hall Estate. The same shift in habitat from tree trunks to cement surfaces has been noted in a number of other members of the Dolichopodidae.

The following three species of *Neurigona* are known from Dominica.

### *Neurigona thoracica* Van Duzee

FIGURE 18

*Neurigona thoracica* Van Duzee, 1931b:178.

**MALE.**—Length 3.8 mm; wing 3.6 mm by 1.0 mm. Eyes contiguous in middle of face, face very narrow with upper and lower remnants white pollinose; front small, metallic green dulled by slight grayish pollen. Palpus ovate, yellow with small black setae and a larger brown apical seta; proboscis yellow. Antenna yellow with brownish tip, segment 3 about as long as wide, triangular with narrowly rounded point, arista from middle of dorsal edge. Lower postocular setae white.

Thorax metallic dark green, extremity of humerus with metepimeron and underside of scutellum yellow, slight grayish pollen thicker on pleura. Setae mostly black, propisternal seta pale; ca. 12 pairs of acrostichals, rows diverging slightly at anterior margin of flattened posterior slope; 5 or 6 distinct pairs of dorsocentrals, rows trailing off anteriorly into series of small setae; scutellum with 2 large bristles, a small hair on lateral margin.

Legs yellow with last segment of all tarsi more brownish. Setae black except a few pale apicals on coxae I and II and 2 ventral rows of minute pale setae on fore tibia. Femora and fore tibia without bristles; tibia II with anterodorsals near 1/5 and 3/5, 2 apicals; tibia III with a number of indistinct small bristles in posterodorsal line, 2 apicals. Fore tarsus without distinctive setae, segments 3 and 4 slightly broadened and flattened below with felted ventral surfaces, segment 4 slightly warped and broader toward middle anteriorly; middle basitarsus with a few inconspicuous slightly enlarged setae along anterior and posterior surfaces. Relative lengths of leg segments from base as coxa I, 50; femur I, 75; tibia I, 75; tarsus I, 53–30–14–11–7; tibia II, 100; tarsus II,

84–42–20–9–7; tibia III, 125; tarsus III, 28–66–28–15–7.

Wing narrowly elliptical, clear with brownish veins. Vein 2 nearly straight; vein 3 curving slightly backward in distal 1/4; vein 4 scarcely sinuous in last part, ending just behind wing apex, scarcely convergent with vein 3. Crossvein 3/5 as long as last of vein 5. Calypter pale with black margin and pale setae; knob of halter slightly fuscous.

Abdomen with segment 1 yellow, tergites 2–4 with progressively larger and more metallic green pairs of spots leaving fore and hind margins and median lines yellow, lateral margin of tergite 2 broadly yellow, tergite 5 totally metallic green, hind margins of tergites 2–4 white pollinose, lateral margins with fringe of pale setae. Hypopygium (Figure 18) shining black, short and broad, borne on tip of downcurved preabdomen; broad tip of hypopygium bearing white lamellae below, these are adjacent to a long lacinate reddish brown projection, a cluster of smaller brownish or pale-tipped appendages centrally.

**FEMALE.**—Face very narrowly linear, gray pollinose. Tibia II with additional small setae anteroventrally near 2/5 and 3/5 and with small posteroventrals. Abdomen with pollen on sutures less prominent.

**COLLECTION DATA.**—Dominica: 1 ♂ and 2 ♀ Hodges River 4, 6 Mar 1964 H. Robinson; 3 ♂ and 1 ♀ Clarke Hall 11–21 Mar 1964 H. Robinson; 1 ♀ Pont Casse 22 Nov 1964 P. J. Spangler.

**REMARKS.**—The species is presently known only from Panama and Dominica.

### *Neurigona fuscicosta*, new species

FIGURE 19

**MALE.**—Length 3.8 mm; wing 4.1 mm by 1.2 mm. Eyes contiguous in middle of face; upper and lower triangles of face narrow, yellow with white pollen; front metallic green with thin yellow pollen. Palpus ovate, yellow with slight pale pollen, with numerous black setae including 2 larger apicals; proboscis yellow. Antenna yellow; segment 3 about as long as wide, rather blunt, arista dorsal from near base. Lower postocular setae white.

Mesoscutum shining yellow with flattened poste-

rior slope dark metallic blue, blue also on disk of scutellum; pleura, margin and underside of scutellum, and metascutum yellow, pleura dulled with gray pollen; small black spot under wing. Setae black except pale proepisternal; more than 20 pairs of acrostichals, last 4 pairs diverging sharply along anterior margin of posterior slope; 5 or 6 distal dorsocentrals trailing off anteriorly into series of small setae; scutellum with 2 large bristles, small hair on lateral margin.

Legs mostly yellow, last segment of fore and middle tarsi and hind tarsus from tip of basitarsus slightly brownish. Setae of legs black, 2 ventral rows of hairs on fore tibia pale. Femora and fore tibia without bristles; tibia II with anterodorsals near base and  $1/2$ , sometimes also near basal  $1/3$ , posterodorsals near base and distal  $1/3$ , anteroventral near basal  $1/3$ , small posteroventrals near  $2/5$  and distal  $1/3$ , small posterior near distal  $1/3$ , 4 apicals; tibia III with 3 or 4 rather distinct posterodorsals along basal  $1/2$ , no anterodorsals, a few indistinct ventrals, 3 apicals. Tarsus II basitarsus with 4 rows of 2–5 small setae along all but posterodorsal surface, distinct seta posteriorly at base. Relative lengths of leg segments from base as coxa I, 45; femur I, 65; tibia I, 75; tarsus I, 62–28–20–14–10; tibia II, 90; tarsus II, 95–30–22–11–6; tibia III, 135; tarsus III, 30–50–27–14–7.

Wing narrowly elliptical, brownish on anterior  $1/3$  or  $1/2$ , clear behind vein 4, veins brown. Vein 2 straight; vein 3 rather close to vein 2, turning somewhat backward near tip; vein 4 scarcely sinuous in last part, more nearly parallel with vein 3 distally and ending just behind wing apex. Crossvein  $1/2$  as long as last of vein 5. Calypter pale with brown margin and brown setae; knob of halter fuscous.

Abdominal tergites 1, 4, and 5 yellow, tergites 2 and 3 deep blackish violet surrounded by yellow margins, center of 4 sometimes fuscous, basal sternites yellow; setae black except rows of many slender pale setae along lateral margins of tergites and sternites; sternite 5 brown and hoodlike with projecting hind margin and a pair of slender apical appendages which are often pressed against hypopygium. Hypopygium (Figure 19) shining black, short and broad, borne under tip of preabdomen; broad tip of hypopygium bearing small, white, finely pale-pubescent lamellae dorsally and

a cluster of short slender yellow appendages ventrally, small dark beak centrally.

**FEMALE.**—Face as wide in middle as width of middle tibia, wider above and below; antennal segment slightly shorter than high. Wing with slight anterior infuscation; crossvein  $3/5$  as long as last of vein 5. Abdominal tergites 2–4 with blackish bands.

**TYPE DATA.**—Holotype ♂ and 2 ♂ paratypes from Dominica: Clarke Hall 2 Mar 1964 H. Robinson (USNM 72856). Allotype ♀ and 1 ♀ paratype from Dominica: Clarke Hall 3 Mar 1964 H. Robinson. Additional paratypes from Dominica: 3 ♂ and 1 ♀ Clarke Hall 28 Feb–17 Apr 1964 H. Robinson; 2 ♂ and 1 ♀ Clarke Hall, Manets Gutter 1–7 Mar 1965 W. W. Wirth.

**REMARKS.**—The new species is closely related to *Neurigona signifer* Aldrich but shows striking differences in the hypopygium and distal abdominal segments of the male. Lesser differences in details of the legs and in coloration of the abdomen are sufficient to distinguish both males and females of the species.

### *Neurigona signifer* Aldrich

FIGURE 17

*Neurigona signifer* Aldrich, 1896:337.

**MALE.**—Length 4.0 mm; wing 4.0 mm by 1.2 mm. Head and thorax as in *Neurigona fuscicosta*.

Legs and their setae colored as in *N. fuscicosta* except usually a few pale setae among apicals of fore coxa. Tibia II with anterodorsals near  $1/4$  and  $2/3$ , posterodorsal near  $1/4$ , anteroventral near  $1/3$ , ventral seta near  $1/2$ , 4 apicals with adjacent posterior bristle on base of basitarsus; tibia III with anterodorsal near  $1/4$ , usually 3 posterodorsals along basal  $1/2$ , 3 apicals, some indistinct ventrals; middle basitarsus as in *N. fuscicosta*. Relative lengths of leg segments from base as coxa I, 45; femur I, 65; tibia I, 65; tarsus I, 50–30–19–12–9; tibia II, 75; tarsus II, 85–28–20–10–7; tibia III, 120; tarsus III, 30–44–24–14–7.

Wing similar to *N. fuscicosta* but clear to slightly yellowish.

Abdomen with blackish violet bands in centers of tergite 2–4 and covering all but lateral margins of tergite 5, preabdomen otherwise yellow; setae

black except pale setae along lateral margins; sternite 5 hoodlike with posterior margin projecting, with only very short apical projections. Hypopygium (Figure 17) shining black, short and broad, with small white pale-pubescent lamellae near tip below, a prominent beak on upper side at tip.

**FEMALE.**—Mostly like *N. fuscicosta* except difference in setae of tibiae II and III and presence of pale apical seta on fore coxa. No notable infuscation of anterior part of wing.

**COLLECTION DATA.**—Dominica: 6 ♂ and 9 ♀ Clarke Hall 5 Feb–13 Mar 1964 H. Robinson; 1 ♀ Pont Casse 27–30 Nov 1964 P. J. Spangler.

**REMARKS.**—The species is presently known from Mexico, Nicaragua, the Lesser Antilles, and Bolivia. Dominican female specimens have been seen eating psocids and collembola.

### Subfamily MEDETERINAE

#### Genus *Medetera* Fischer von Waldheim

Medium to small sized with stout, usually dark or grayish body, setae dark or pale. Male face broad, as broad as in female, metallic with little pollen, clypeus prominent and delimited by strong transverse suture; front broad, much broader above. Palpus metallic or black. Pseudotracheae

6, not sclerotized or with minute spicules. Antennae with all 3 segments short; segment 1 bare above; segment 2 truncate; arista apical. Head strongly excavated behind the vertex. Postocular setae uniseriate.

Thorax metallic greenish or bluish, mesoscutum with posterior slope distinctly strongly flattened; acrostichals small, biseriate; only posterior dorsocentrals distinct; 2–4 distinct scutellars; 1 or 2 setae above fore coxa. Fore and middle coxae with numerous hairs on anterior surface, a few near tip longer; hind coxa with 1 external bristle; femora without preapicals; fore tarsus sometimes ornamented.

Wing oval. Vein 2 equally distant from vein 4 at tip and opposite crossvein; vein 3 nearer vein 2 in middle, nearer vein 4 at tip; vein 4 ending in wing apex; crossvein perpendicular to base of vein 4, much shorter to slightly longer than last of vein 5; vein 6 represented by very slight fold.

Abdomen broad, tapering, usually metallic. Hypopygium large or borne on large peduncle, reaching far forward under preabdomen, with small or indistinct outer appendages, with intricate inner appendages including a pair of complex basically trilobed projections.

**REMARKS.**—Species of *Medetera* occur on tree trunks and plant stems or various wood and cement objects. The habitats are often rather dry.

### Key to the Species of *Medetera* in Dominica

1. Length ca. 3.0 mm; thorax with 3 pairs of large dorsocentrals, 4 large scutellars; hind femur with 2 or 3 large bristles on anterior surface; crossvein slightly longer than last of vein 5; male fore tarsus ornamented ..... 2  
Length 2.0 mm or less; thorax with 2 pairs of large dorsocentrals, only 2 large scutellars, other pair much smaller or lacking; hind femur with either ca. 5 bristles or no bristles on anterior surface; crossvein shorter than last of vein 5; male fore tarsus plain ..... 3
2. Fore and middle femora brown; hind tibia with posterodorsals irregularly spaced, mostly in distal 1/3 ..... *M. archboldi*  
All femora yellow; hind tibia with 4 or 5 rather regularly spaced posterodorsals ..... *M. steyskali*
3. Femora dark; antennae black; hypopygium of male sessile ..... 4  
Femora and rest of legs yellow; antennal segments 1 and 2 yellow; hypopygium of male pedunculate ..... 5
4. Tibiae and most of tarsi yellow; crossvein 2/3 as long as last of vein 5; calypter with pale setae; hypopygium of male extending posteriorly beyond preabdomen ..... *M. crassicauda*  
Tibiae and all but basal 2 or 3 tarsal segments dark; crossvein 1/2 as long as last of vein 5; calypter with brown setae; hypopygium of male not extending posteriorly beyond preabdomen ..... *M. pseudonigripes*
5. Hind femur with ca. 5 large setae along middle of anterior surface; scutellum without a lateral seta ..... *M. seriata*  
Hind femur without large setae on anterior surface; scutellum with distinct seta on lateral margin 1/4 as long as the large bristles ..... *M. dominicensis*



Some species of western North America are noted for laying their eggs near the galleries of bark beetles where the larvae are predaceous on the larvae of the beetles. I have seen some of the Dominican species of *Medetera* suspiciously close to termite nests, which suggests certain similarities to the feeding habits of the more northern species.

The following six species of *Medetera* are known from Dominica.

***Medetera dominicensis*, new species**

FIGURE 20

MALE.—Length 1.7 mm; wing 2.0 mm by 0.7 mm. Setae brownish to yellowish with pale reflections. Face, front, palpus, and back of head dark metallic green. Palpus with white hairs and white apical seta; proboscis yellowish. Antenna with segments 1 and 2 yellow; segment 3 brown, short, very blunt, arista apical. Lower postocular setae white.

Thorax metallic dark green with thin yellowish pollen; 6 or 7 pairs of acrostichals, hind pairs not offset toward sides; only 2 hind pairs of dorso-centrals enlarged; 2 large scutellars, seta on lateral margin fine and 1/4 as long as scutellar bristles.

Fore and hind coxae and tip of middle coxa yellow, base and upper anterior surface of middle coxa brownish, 5th segments of tarsi brown, legs otherwise yellow. Setae of coxae pale, most other setae of legs brownish with pale reflections. Femora without distinct setae, hind femur straight and glabrous ventrally. Fore and hind tibiae plain; tibia II with pair of small black dorsals near basal 1/3, 1 small but distinct apical ventrally. Relative lengths of segments of tarsi from base as tarsus I, 7-8-4-3-3, plain; tarsus II, 10-10-6-3-3; tarsus III, 6-15-7-4-4.

Wing oval, grayish, granular, veins yellowish. Vein 2 slightly arched, nearly straight to slightly concave in distal 1/2, mostly midway between costa and vein 3; vein 3 bending slightly forward at tip and becoming parallel to tip of vein 4, vein 3 ending at point 2/3 of distance between veins 2 and 4; vein 4 with ca. 160° angle at crossvein. Crossvein 1/2 as long as last of vein 5. Calypter and its setae pale; knob of halter yellow.

Abdomen metallic bronze-green above, brown

below; setae blackish with pale reflections, more whitish on tergite 6. Hypopygium (Figure 20) with peduncle short but distinct; capsule brown, cylindrical, 1.5 times as long as wide; appendages yellowish, forming a compact head.

FEMALE.—Head, thorax, legs, wings, and pre-abdomen basically as in male.

TYPE DATA.—Holotype ♂ and 1 ♂ paratype from Dominica: Springfield Estate 9 Mar 1964 H. Robinson (USNM 72857). Allotype ♀ and 3 ♂ paratypes from Dominica: Syndicate Estate 6 Mar 1964 H. Robinson. Additional paratypes from Dominica: 6 ♂ and 5 ♀ Hodges River 4 Mar 1964 H. Robinson; 5 ♂ and 3 ♀ Blenheim River 4 Mar 1964 H. Robinson; 1 ♂ Fond Figues River 17 Mar 1964 H. Robinson.

REMARKS.—The new species seems closest to *Medetera xanthotricha* Becker of Trinidad, but the latter has all setae pale yellow and the antenna wholly reddish yellow.

***Medetera seriata*, new species**

FIGURE 21

MALE.—Length 1.6 mm; wing 1.6 mm by 0.6 mm. Setae mostly black. Front and back of head dark metallic green; face and palpus metallic bluish. Palpus with pale setae; proboscis black. Antenna with segments 1 and 2 yellow; segment 3 brown, short, very blunt, arista apical. Lower postocular setae white.

Thorax metallic green dulled with slight yellowish pollen; 5 or 6 pairs of acrostichals, posterior pairs not offset toward sides; only 2 hindmost dorsocentrals enlarged; 2 large scutellars, no seta on lateral margin.

Coxae yellow with bases of middle and hind coxae rather brownish; 5th segments of tarsi brownish, legs otherwise yellow. Setae of coxae pale, most setae of legs brownish with pale reflections. Fore and middle femora plain, hind femur with a row of ca. 5 large erect setae along middle of anterior surface. Fore and hind tibiae plain; tibia II with pair of small blackish dorsals near basal 1/4. Tarsi plain; relative lengths of segments of tarsi from base as tarsus I, 7-5-4-3-4; tarsus II, 9-7-5-3-4; tarsus III, 5-9-6-3-4.

Wing oval, rather clear; veins brownish, yellowish near apex. Vein 2 nearly straight; vein 3

ending at point  $2/3$  distance between tips of veins 2 and 4; vein 4 with ca.  $160^\circ$  angle at crossvein. Crossvein  $1/2$  as long as last of vein 5. Calypter with brown margin, setae and knob of halter pale.

Abdomen bronze-green, setae blackish with pale reflections. Hypopygium (Figure 21) with distinct peduncle; capsule brown, cylindrical, as long as wide; appendages pale, outer appendages short, acute, with pale hairs; inner appendages long with short branches.

**FEMALE.**—Head, thorax, legs, wings, and preabdomen mostly as in male; hind femur with row of anterior setae as in male.

**TYPE DATA.**—Holotype ♂ from Dominica: Clarke Hall 8 Mar 1964 H. Robinson (USNM 72858). Allotype ♀ from Dominica: Clarke Hall 11 Mar 1964 H. Robinson. Paratypes from Dominica: 5 ♂ and 3 ♀ Clarke Hall 7 Mar–11 Apr 1964 H. Robinson; 1 ♂ and 1 ♀ Springfield Estate 9 Mar 1964 H. Robinson; 1 ♀ Fond Figes River 17 Mar 1964 H. Robinson.

**REMARKS.**—The new species is very similar to *Medetera dominicensis* but is very distinct in the presence of a row of erect setae on the anterior surface of the hind femur and in the lack of a seta on the lateral margin of the scutellum. The new species also seems to differ in a generally less compact form of the hypopygial appendages.

### *Medetera crassicauda*, new species

FIGURE 22

**MALE.**—Length 2.0 mm; wing 2.0 mm by 0.7 mm. Setae mostly brownish with pale reflections. Face metallic dark bluish, front and hind surface of head dark green. Palpus blackish with a few pale setae; proboscis black. Antenna black; arista apical. Lower postocular setae white.

Thorax metallic dark green dulled with light yellowish pollen; 8 or 9 acrostichals, rows slightly diverging posteriorly; only posterior 2 pairs of dorsocentrals notably enlarged; scutellum with 2 bristles, seta on lateral margin small,  $1/4$  as long as bristles.

Coxae, basal  $2/3$  of femora and last  $1-1/2$  segments of tarsi brown, legs otherwise yellow; setae of coxae yellowish, other setae of legs pale. Femora without distinct setae. Tibia II with pair of small dorsals near basal  $1/4$ , 1 apical ventrally. Tarsi

plain; relative lengths of segments of tarsi from base as tarsus I, 10–8–6–4–3; tarsus II, 15–12–8–4–2; tarsus III, 8–14–9–4–3, basitarsus with black spicule posteriorly at base.

Wing narrowly oval, rather clear; veins brownish. Vein 2 curving very slightly backward; vein 3 curving more strongly backward, curving slightly forward at tip and becoming parallel to tip of vein 4, ending at point  $2/3$  to  $3/4$  distance between tips of veins 2 and 4; vein 4 with  $160^\circ$  angle at crossvein. Crossvein  $2/3$  as long as last of vein 5. Calypter, its setae, and knob of halter yellow.

Abdomen brownish with green reflections; setae small, blackish. Hypopygium (Figure 22) sessile, brown, fusiform, very large with base projecting back beyond attachment to preabdomen, 2.5 times as long as wide; outer appendages brown, small, lamellate pale-pubescent; inner appendages longer, spathulate, pale.

**FEMALE.**—Head, thorax, legs, wings, and preabdomen mostly as in male.

**TYPE DATA.**—Holotype ♂, allotype ♀, 2 ♂ and 15 ♀ paratypes from Dominica: South Chiltern Estate 25–26 Mar 1964 H. Robinson (USNM 72859). Additional paratypes from Dominica: 1 ♀ 11 Feb 1964 D. F. Bray, 1 ♂ 11–20 Jan 1965 malaise trap, 2 ♂ and 2 ♀ 21 Feb–31 Mar 1965 light trap, all W. W. Wirth, all Clarke Hall; 1 ♂ and 2 ♀ Blenheim River 4 Mar 1964 H. Robinson; 1 ♂ and 2 ♀ Picard Estate 6 Mar 1964 H. Robinson; 1 ♂ 16 Apr 1964 H. Robinson, 2 ♂ 20 Feb 1965 light trap, W. W. Wirth, all South Chiltern Estate. Paratype from Puerto Rico: 1 ♂ San Juan Drive 15 Feb 1963 Lt. Saunders.

**REMARKS.**—The new species is in the group that includes *Medetera veles* Loew of the United States. The most distinctive feature of the new species is the extremely large hypopygial capsule that extends backward even beyond the end of the preabdomen. A possibly related species from the West Indies is *M. exigua* Aldrich described from Grenada as having an elongate slender hypopygium and minute antennae. A specimen from Trinidad generally fitting the description of *M. exigua* has been illustrated (Figures 23, 24). The hypopygium is of different form and the third antennal segment is unusually small and conical. Another possible relative is *M. plebeia* Parent of Costa Rica described as 2.25 mm long with a black

hypopygium as wide and long as the preabdomen and with yellow appendages. The latter species seems distinct in the four distinct bristles on the scutellum.

*Medetera pseudonigripes*, new species

FIGURE 25

MALE.—Length 1.4 mm; wing 1.4 mm by 0.5 mm. Setae mostly black. Face and front obscured by brown pollen, with greenish or reddish reflections. Palpus black with small dark apical seta; proboscis black. Antenna black; arista apical. Lower postocular setae white.

Thorax dark metallic green with thick brown pollen; 5 or 6 pairs of acrostichals, posterior pairs not diverging toward sides; only posterior 2 pairs of dorsocentrals much enlarged; scutellum with 2 large bristles, with very small seta on lateral margin 1/5 as long as bristles; seta over fore coxa pale.

Coxae and femora blackish, tibiae and distal tarsal segments brownish, tips of tibiae paler, basitarsi and following 2 or 3 segments yellowish. Setae of fore coxa rather pale. Femora without distinct setae. Tibia II with small distinct antero-dorsal near basal 1/3 paired with minute postero-dorsal, small indistinct apical ventrally. Tarsi plain; relative lengths of segments of tarsi from base as tarsus I, 7-5-3-2-3; tarsus II, 8-7-5-3-3; tarsus III, 5-13-6-4-3.

Wing oval, grayish, granular; veins brown. Vein 2 and last part of vein 4 curving very slightly backward; vein 3 curved more in middle, straighter and more parallel with vein 4 near tip, ending at point 3/5 of distance between tips of veins 2 and 4; vein 4 with 160° angle at crossvein. Crossvein 1/2 as long as last of vein 5. Calypter and knob of halter pale, setae of calypter brownish with pale reflections.

Abdomen brownish with greenish or reddish reflections, dusted with brownish gray pollen; setae small, brown with pale reflections. Hypopygium (Figure 25) brown, in part shining, sessile, stout, 1.5 times as long as wide; appendages brownish; outer appendages very small, pubescent; inner appendages a pair of short, broad, mostly glabrous armatures.

FEMALE.—Head, thorax, legs, wings, and preabdomen essentially as in male.

TYPE DATA.—Holotype ♂, 2 ♂ and 1 ♀ paratypes from Dominica: Clarke Hall 7 Mar 1964 H. Robinson (USNM 72860). Allotype ♀, 8 ♂ and 11 ♀ from Dominica: Blenheim River 4 Mar 1964 H. Robinson. Additional paratypes from Dominica: 1 ♂ and 1 ♀ Picard Estate 6 Mar 1964 H. Robinson.

REMARKS.—The mostly dark legs of the new species are reminiscent of *Medetera nigripes* Loew of the eastern United States. The latter species is larger, about 2.0 mm long, with the cell of the wing longer in comparison to its width and the crossvein about as long as the last part of the 5th vein, the lateral seta of the scutellum is 1/2 as long as the bristles, the setae of the lower orbit and fore coxae are brown, the basitarsi are black, and the hypopygial lamellae are broader. The hind basitarsus of *M. nigripes* has a distinct basal spicule which seems to be lacking in the new species.

*Medetera archboldi*, new species

FIGURES 26, 27

MALE.—Length 3.0 mm; wing 3.2 mm by 1.1 mm. Setae mostly black. Face and front metallic dark green without evident pollen, clypeus brownish. Palpus black with small brown setae; proboscis blackish. Antenna black; segment 2 with rather large setae above; segment 3 short, blunt, somewhat compressed laterally, arista apical. Lower postocular setae pale.

Thorax metallic dark green or bluish, pleura darker with slight grayish pollen; anterior acrostichals not distinct among numerous small setae covering anterior 1/2 of mesoscutum, posterior acrostichals in 2 diverging series just before flattened posterior slope; 3 pairs of large dorsocentrals; scutellum with 4 large bristles, outer pair 3/4 as long as inner pair; lower proepisternal seta dark.

Coxae dark brown, setae brown with pale reflections; fore and middle femora and 5th segments of tarsi brown, middle trochanter on hind surface with hind femur and tibia and segments 1-4 of all tarsi yellow. Femora I and II with distal postero-ventrals rather prominent; femur III with 3 erect

long black setae along middle of anterior surface, many rather long setae anterodorsally at base. Tibia II with pair of small black dorsals near basal  $1/3$ , 5 small apicals; tibia III with 1 small black anterodorsal near  $1/3$ , posterodorsals small and pale near  $1/3$  and irregular along distal  $1/3$ , small black apical anterodorsally, setae of posterior surface pale. Tarsus I (Figure 26) with segments 1, 4, and 5 cylindrical, 2 broad and compressed apically, 3 as broad as long, 3 and tip of 2 hollowed out on anterior surface, relative lengths of segments from base as 19-10-6-4-5; tarsus II, 24-11-8-4-4, plain; tarsus III, 12-33-13-6-5, basitarsus with 1 or 2 minute black spicules posteriorly at base, 2 small apicals.

Wing oval, rather clear; veins brownish. Vein 2 and last part of vein 4 curving slightly backward; vein 3 more curved, ending at point  $5/6$  of distance between tips of veins 2 and 4; vein 4 with  $155^\circ$  angle at crossvein. Crossvein slightly longer than last part of vein 5. Calypter with setae and halter pale.

Abdomen stout, metallic dark green with little or no pollen; setae short, blackish with pale reflections; sternites brown. Hypopygium (Figure 27) slender, twice as long as wide, brown, distinctly pedunculate; cerci brown, small, lamellate with pale setae; armatures slender-stalked, much broadened apically, yellow, with clear apical lobe bearing numerous long pale setae; aedeagus from basal  $1/4$  of capsule, in groove, not visible from lateral view.

**FEMALE.**—Head, thorax, hind femur, and wing as in male; tibia III with basal posterodorsal more often dark; fore tarsus plain, relative lengths of segments as 16-8-5-4-3.

**TYPE DATA.**—Holotype ♂ and 4 ♂ paratypes from Dominica: Clarke Hall 8 Mar 1964 H. Robinson (USNM 72861). Allotype ♀ and 4 ♂ paratypes from Dominica: Clarke Hall 11 Mar 1964 H. Robinson. Additional paratypes from Dominica: 2 ♂ 24 Feb, 1 ♂ 3 Mar, 1 ♀ 7 Mar, 4 ♂ 11 Mar, 1 ♂ and 1 ♀ in copulation 14 Mar 1964, all Clarke Hall, H. Robinson; 1 ♂ La Ronde River 15 Feb 1964, 1 ♂ and 1 ♀ Springfield Estate 9 Mar 1964, 1 ♂ Fond Figue River 17 Mar 1964, all H. Robinson.

**REMARKS.**—The new species belongs to a series having ornamented fore tarsi in the males. The dark fore and middle femora and pale hind femur

are reminiscent of *M. occidentalis* Schiner of Venezuela, *M. varipes* Van Duzee of Guatemala, and *M. jamaicensis* Curran of Jamaica. The last species seems closest but has the hind basitarsus  $2/3$  as long as the following segment, the anterior tarsus of the male with segments enlarged gradually from the base of the second to the end of the third with the last two segments small, and the setae of the calypter brownish.

### *Medetera steyskali*, new species

FIGURES 28, 29

**MALE.**—Length 2.7 mm; wing 2.9 mm by 1.0 mm. Setae mostly black. Face and front metallic dark green or bluish with little or no pollen, clypeus more brownish. Palpus, its short setae, and proboscis blackish. Antenna black or with basal segments somewhat yellow; segment 3 short, blunt, slightly compressed laterally, arista apical. Lower postocular setae pale.

Thorax dark green, pleura darker with slight grayish pollen; acrostichals ca. 12 pairs, not very distinct in anterior part among numerous setae covering anterior half of mesoscutum, hindmost acrostichals diverging slightly just before flattened posterior slope; 3 pairs of large dorsocentrals; scutellum with 4 large bristles, outer pair  $3/4$  as long as inner pair; lower proepisternal seta dark.

Coxae dark brown, setae brown with pale reflections, external seta of hind coxa sometimes yellow; legs otherwise yellow with mostly dark setae. Femora I and II with a few long posteroventrals apically; femur III with 2 or 3 erect long black setae along middle of anterior surface, many, rather long, erect setae anterodorsally at base. Tibia II with pair of black dorsals near basal  $1/3$ , 5 small apicals; tibia III with 1 small black anterodorsal near  $1/3$ , 4 or 5 posterodorsals yellowish or pale brownish, small black apical anterodorsally. Tarsus I (Figure 28) with segment 1 cylindrical, 2 broad and compressed apically, 3 nearly as broad as long, 3 and tip of 2 concave on anterior surface, relative lengths of segments from base as 20-10-7-2-3; tarsus II, 22-11-8-4-4, plain; tarsus III, 12-23-17-7-5, basitarsus with minute black basal spicule posteriorly, 2 small apicals; setae posteriorly on hind tibia and basal 2 segments of hind tarsus mostly pale.

Wing oval, rather clear; veins brownish, sometimes yellowish at tip. Vein 2 and last part of vein 4 curving slightly backward; vein 3 more curved, ending at point 5/6 of distance between veins 2 and 4; vein 4 with 160° angle at crossvein. Crossvein slightly longer than last of vein 5. Calypter, its setae, and halter pale.

Abdomen stout, metallic dark green with little or no pollen; setae short, blackish with pale reflections; sternites brown. Hypopygium (Figure 29) slender, twice as long as broad, distinctly pedunculate; cerci brown, small, lamellate with pale setae; armatures with inner appendages pale, slender-stalked, deeply cleft with short pale setae distally; aedeagus from near basal 1/4 of capsule, in groove, not visible from lateral view.

FEMALE.—Head, thorax, hind femur, wing, and preabdomen essentially as in male; tibia III with posterodorsal mostly black; fore tarsus plain, lengths of segments as 20–10–6–3–4.

TYPE DATA.—Holotype ♂ and 1 ♂ paratype from Dominica: Clarke Hall 11 Mar 1964 H. Robinson (USNM 72862). Allotype ♀ Dominica: Clarke Hall 14 Mar 1964 H. Robinson. Additional paratypes from Dominica: 3 ♂ 8 Mar, 1 ♂ 11 Apr 1964 H. Robinson, 1 ♂ 30 May 1966 G. Steyskal, all Clarke Hall.

REMARKS.—The new species belongs to the group having ornamented fore tarsi in the male, but the species seems totally distinct in having all the femora pale.

### Genus *Thrypticus* Gerstacker

Rather small sized with stout body, setae dark or pale; face, front, and body bright metallic green often discolored with blue or violet when dry. Face narrowed below, without setae, clypeus distinct and slightly widened; front broad, broader above. Palpus small. Pseudotracheae 6, not sclerotized. Antennae with all 3 segments short; segment 1 bare above; segment 2 truncate, ringed with small setae; segment 3 short and disciform with central arista. Posterior surface of head nearly bare, strongly excavated above; lower postocular surface with a row of very fine pale setae.

Mesoscutum broadly and strongly rounded anteriorly, flattened posteriorly; acrostichals small, biseriata; usually 5 or 6 distinct pairs of dorso-

centrals; scutellum with 2 large, widely separated bristles, a small hair on side. Fore and middle coxae with numerous hairs on anterior surface, a few near tip longer; hind coxa with 2 external bristles; femora without preapicals; middle tibia usually with 1 anterodorsal.

Wing rather oblong-oval. Vein 4 diverging from vein 2 and ending in wing apex; crossvein perpendicular to base of vein 4, shorter than last of vein 5; vein 6 completely lacking.

Abdomen broad, tapering. Hypopygium usually large, sometimes pedunculate, projecting far forward under preabdomen; apical appendages often forming a disciform unit, appendages including a pair of complex, basically trilobed projections; aedeagus arising from basal 1/2 of capsule.

The larvae of *Thrypticus* are plant miners having reduced mouthparts. The apparently phytophagous larvae distinguish the genus from all other known larvae of Dolichopodidae including those of the closely related genus *Medetera*. Adults of *Thrypticus* seem to occur mostly on herbaceous vegetation where they are rarely seen but can often be taken in great numbers by random sweeping with a net.

The following twelve species of *Thrypticus* are known from Dominica.

### *Thrypticus fraterculus* (Wheeler)

FIGURES 30–32

*Aphantotimus fraterculus* Wheeler, 1890:376.

MALE.—Length 1.8 mm; wing 1.5 mm by 0.6 mm. Setae brownish. Face 1/2 as wide below as antennal segment 1. Palpus and proboscis brown. Antenna brown.

Thorax as high as long, green dulled with yellowish pollen. Setae pale; 7 or 8 pairs of acrostichals, rows slightly diverging posteriorly; 6 pairs of dorsocentrals, last 3 pairs somewhat to greatly enlarged; scutellum with 2 large bristles, no seta on lateral margin.

Coxae and femora mostly dark greenish with tips yellow; trochanters, tibiae, and basal tarsi yellowish; 5th segments of tarsi brownish; setae pale, especially on coxae and ventrally on femora. Tibia II with only very minute anterodorsal near basal 1/3. Relative lengths of leg segments from



base as tibia I, 40; tarsus I, 20-10-6-4-7; tibia II, 50; tarsus II, 24-14-8-6-7; tibia III, 56; tarsus III, 16-21-11-7-8.

Wing (Figure 32) oblong-oval, clear; veins brownish. Vein 2 essentially straight; veins 3 and 4 curved backward slightly, scarcely closer at tips. Crossvein perpendicular to and 1/2 as long as last part of vein 5. Calypter and setae pale, halter pale.

Abdomen light green dulled with yellowish pollen, setae pale. Hypopygium (Figure 30) brownish black with greenish reflections; appendages pale; outer lamellae translucent, lanceolate, finely fringed; armatures broadened toward the truncated darkened apex; short slender inner appendage with two long fine setae; central appendage longer, slender, reddish brown.

FEMALE.—Head, thorax, legs, wing, and pre-

abdomen mostly as in male. Genitalia (Figure 31) with sheath small, short and dark; ovipositor dark with pale base, bladeliike, with slightly sinuous tip.

COLLECTION DATA.—Dominica: 1 ♀ Sylvania, grassy marsh 25 Jan, 1 ♂ Cabrit Swamp 23 Feb, 24 ♂ and 3 ♀ Cabrit Swamp 22-25 Mar 1965; all W. W. Wirth.

REMARKS.—*Thrypticus fraterculus* (Wheeler) is possibly the most widely distributed species of the family Dolichopodidae, being known from Alaska and Canada southward through the United States, Mexico, and the West Indies to Chile. Specimens from western Siberia recently described as *T. emiliae* Negrobov also seem to be this species. A similar but apparently distinct species from the Eastern Hemisphere is *T. sumatranus* Hollis of Indonesia.

### Key to the Species of *Thrypticus* in Dominica

1. Femora mostly brown or metallic green .....2  
Femora pale .....3
2. Tibiae and tarsi partly dark, body dulled with whitish pollen; wing vein 5 with basal part much longer than distal part .....*T. fraterculus*  
Tibiae and tarsi wholly pale, body very shiny; parts of wing vein 5 equally long .....*T. varipes*
3. Abdominal tergites or scutellum partly yellow .....*T. abdominalis*  
Abdominal tergites and scutellum wholly metallic green .....4
4. Fore tibiae with black dorsal spur in both sexes; antenna base yellow, outer surface of middle coxa dark .....*T. armatus*  
Fore tibiae without basal spur .....5
5. Last part of wing vein 4 curved, parallel with vein 3; middle and hind coxae dark .....6  
Last part of wing vein 4 straight, convergent with vein 3 toward tip .....7
6. Abdominal hairs prominently whitish; antennal segment 1 wholly yellow; last segment of fore tarsus black; hypopygial lamellae nearly as long as capsule .....*T. senilis*  
Abdominal setae fine, yellow; antennal segment 1 mostly brownish; last segment of fore tarsus not black; hypopygial lamellae much shorter than capsule .....*T. insulanus*
7. Basal abdominal sternites yellow; hypopygial lamellae of male with pairs of very long pale setae at apex .....*T. violaceus*  
Abdominal sternites dark; hypopygial lamellae without exceptionally long apical setae .....8
8. Thorax with 8 or more pairs of acrostichals with hindmost offset to sides; outer hypopygial appendages longer than capsule .....*T. parvulus*  
Thorax with 5 or 6 (rarely 7) pairs of acrostichals in essentially straight rows; hypopygial appendages shorter than capsule .....9
9. Antennae yellow; segments 1 and 2 of hind tarsus of about equal length; wing vein 4 distinctly bent at crossvein; hypopygium tapered from base into appendages .....*T. aequalis*  
Antennae dark; segment 2 of hind tarsus distinctly longer than segment 1; wing vein 4 scarcely bent at crossvein; hypopygium not tapering .....10
10. Basal part of wing vein 5 distinctly longer than distal part; hypopygial appendages of male spreading, not forming disk, densely fringed on truncate tips .....*T. subdissectus*  
Basal and distal parts of wing vein 5 of nearly same length; hypopygial appendages of male forming a disk .....11
11. About 2.0 mm long; dorsal hairs of male fore tarsus curved .....*T. crinipes*  
About 1.5 mm long; hairs of fore tarsus straight, not modified in male .....*T. delicatus*

*Thrypticus varipes*, new species

FIGURES 33-35

MALE.—Length 2.0 mm; wing 1.9 mm by 0.7 mm. Setae mostly brownish. Face as wide below as antennal segment 1. Palpus and proboscis brownish. Antenna brown.

Thorax as high as long, shining green; setae brownish yellow; 7 or 8 pairs of acrostichals, rows not diverging posteriorly, posterior 4 pairs of dorsocentrals somewhat to greatly enlarged; scutellum with 2 large bristles, small but distinct seta on lateral margin.

Coxae brownish; femora brown with green reflections, bases and tips of femora, trochanters, tibiae, and tarsi yellow. Tibia II with no anterodorsals. Relative lengths of leg segments from base as tibia I, 45; tarsus I, 19-7-5-3-4; tibia II, 50; tarsus II, 22-10-6-4-6; tibia III, 60; tarsus III, 14-14-8-4-7.

Wing (Figure 35) oval, clear; veins yellowish. Vein 2 essentially straight to tip; vein 3 slightly converging with vein 4 in distal 1/3; vein curved slightly backward. Crossvein perpendicular with base of vein 4, 1/2 as long as last of vein 5. Calypter with tip and setae black; halter pale.

Abdomen shining metallic green; setae brownish with pale reflections. Hypopygium (Figure 33) brown, short and thick; appendages yellow, forming deep disk; outer lamellae lanceolate, finely fringed; armature thick; central projection stout, reddish brown.

FEMALE.—Head, thorax, legs, wing, and pre-abdomen mostly as in male. Genitalia (Figure 34) with short sheath, capsule with small but distinct dorsal spur at tip; ovipositor simple, narrowly and sharply pointed.

TYPE DATA.—Holotype ♂ from Dominica: Layou River mouth 6 Feb W. W. Wirth (USNM 72863). Allotype ♀ and 5 ♀ paratypes from Dominica: Clarke Hall, malaise trap 8-10 Jan 1965 W. W. Wirth. Additional paratypes from Dominica: 7 ♀ Clarke Hall, malaise trap 11-31 Jan 1965 W. W. Wirth; 1 ♀ Benjamin 11 Sept 1965 D. L. Jackson.

REMARKS.—The new species can be distinguished from most members of the genus by the dark femora. Other distinctive features include the short discal cell of the wing, the short sessile

hypopygial capsule of the male, and the simple, narrow ovipositor of the female.

*Thrypticus senilis*, new species

FIGURES 36-38

MALE.—Length 1.9 mm; wing 1.3 mm by 0.6 mm. Setae pale yellow. Face 1/2 as wide below as antennal segment 1. Palpus and proboscis brown. Antenna yellow, segment 3 slightly brownish.

Thorax as high as long; light metallic green dulled with yellow pollen; setae pale yellow; 6 or 7 pairs of acrostichals, rows diverging in last pair or last 2 pairs; dorsocentrals with posterior 4 or 5 pairs enlarged; scutellum with 2 large bristles, small seta on lateral margin.

Coxa I brown at base, coxae II and III brownish, slight brownish tinge on tibia I, 5th segments of all tarsi brown, legs otherwise yellow; setae more brownish on dorsal surfaces of femora and on tibiae and tarsi. Tibia II with distinct pale medium-sized anterodorsal near basal 1/3, distinct brown apical ventrally. Relative lengths of leg segments from base as Tibia I, 45; tarsus I, 18-10-7-4-6; tibia II, 45; tarsus II, 24-17-10-6-5; tibia III, 65; tarsus III, 14-22-12-9-7.

Wing (Figure 38) oval, clear; veins yellowish. Vein 2 essentially straight; veins 3 and 4 parallel, curving slightly backward. Crossvein nearly perpendicular with last of vein 4, 3/4 as long as last of vein 5. Calypter with setae and halter pale.

Abdomen light metallic bluish green dulled with whitish pollen; setae whitish. Hypopygium (Figure 36) short, nearly sessile, slightly tapering, dark with metallic bluish green reflections; appendages as large as capsule forming a pedunculate compact unit; unit enclosed in large ovate outer lamellae having somewhat flaring expanded tips; inner appendages long and slender; central projection darker, in ventral groove.

FEMALE.—Head, thorax, legs, wing, and pre-abdomen mostly as in male. Genitalia (Figure 37) with sheath very short, hardly distinct; ovipositor slender, lanceolate with only slightly differentiated tip.

TYPE DATA.—Holotype ♂, allotype ♀, and 1 ♀ paratype from Dominica: Cabrit Swamp 22-25 Mar 1965 W. W. Wirth (USNM 72864).

REMARKS.—Distinctive features of the new species include the pale yellow to whitish setae,

the parallel 3rd and 4th veins of the wing, the very large appendages of the male hypopygium, and the simple form of the ovipositor.

*Thrypticus insulanus* Van Duzee

FIGURES 39-41

*Thrypticus insulanus* Van Duzee, 1933:14.

*Thrypticus minutus* Parent, 1929b:186.

MALE.—Length 1.9 mm; wing 1.7 mm by 0.7 mm. Setae yellowish. Face as wide below as antennal segment 1. Palpus and proboscis brown. Antenna brownish with 2nd segment slightly yellow.

Thorax as long as high, dark shining green; 6 or 7 pairs of acrostichals, rows diverging only in posterior pair; dorsocentrals with 5 pairs somewhat to greatly enlarged; scutellum with 2 large bristles, small seta on lateral margin.

Coxae II and III and base of coxa I brown, most of coxa I and rest of legs yellow, distal segments of tarsi darker yellow; setae brownish yellow. Tibia II with small dorsal near basal 1/3, apicals with 1 long ventrally. Relative lengths of leg segments from base as tibia I, 50; tarsus I, 18-11-7-6-8; tibia II, 55; tarsus II, 28-18-12-9-8; tibia III, 70; tarsus III, 18-24-14-10-10.

Wing (Figure 40) oval, clear; veins yellow. Vein 2 straight; veins 3 and 4 parallel, curved slightly backward. Crossvein perpendicular to base of vein 4, 3/5 as long as last of vein 5. Calypter and setae pale; halter pale.

Abdomen dark shining green. Hypopygium (Figure 39) brown, large, sessile, very large in basal 1/2 and narrowed distally; lamellae forming disk, small, pale, points of lamellae and armatures juxtaposed; disk with flange above; central appendage slender from base of hypopygium.

FEMALE.—Head, thorax, legs, wing, and preabdomen mostly as in male. Genitalia (Figure 41) with sheath long and cylindrical, flattened; ovipositor very long and slender with small but distinct angular head.

COLLECTION DATA.—Dominica: 4 ♂ and 1 ♀ Layou River mouth 18-24 Mar 1965 W. W. Wirth.

REMARKS.—The species seems widely distributed with specimens seen from Texas, California, Mexico, and the West Indies. Distinctive features include the parallel 3rd and 4th veins of the wing and the large sessile hypopygial capsule of the

male. The very long, slender ovipositor of the female also seems very distinct.

*Thrypticus armatus*, new species

FIGURES 42-46

MALE.—Length 1.8 mm; wing 1.7 mm by 0.6 mm. Setae brown. Face (Figure 44) twice as wide below as antennal segment 1. Palpus and proboscis yellow. Antenna with segments 1 and 2 yellow, segment 3 brown.

Thorax nearly as high as long, bright shining green; setae brownish with pale reflections; 6 or 7 pairs of acrostichals, rows diverging only in last pair; dorsocentrals with 4 posterior pairs enlarged; scutellum with 2 large bristles, minute seta on lateral margin.

Coxae I and III yellow, coxa II brown on outer surface, legs otherwise yellow; setae brown with pale reflections. Tibia I (Figure 45) with large dorsal spurlike bristle at base; tibia II with large black anterodorsal near 1/2, large apical ventrally. Relative lengths of leg segments from base as tibia I, 45; tarsus I, 24-18-12-9-8; tibia II, 78; tarsus II, 30-18-12-9-8; tibia III, 75; tarsus III, 16-24-16-11-8.

Wing (Figure 46) narrowly oval, clear with brown veins. Vein 2 and last of vein 4 nearly straight; vein 3 nearly parallel with last of vein 4. Crossvein perpendicular with last of vein 4, 3/4 as long as last of vein 5. Calypter and setae pale; halter pale.

Abdomen bright shining green; setae brownish yellow. Hypopygium (Figure 42) brown, cylindrical; appendages yellowish; outer appendages indistinct; armatures (Figure 43) distinct with a few short setae; central appendage straight.

FEMALE.—Head, thorax, legs including spur of fore tibia, wing, and preabdomen essentially as in male. Genitalia not visible.

TYPE DATA.—Holotype ♂ and allotype ♀ from Dominica: Cabrit Swamp 22-25 Mar 1965 W. W. Wirth (USNM 72865).

REMARKS.—The new species is easily distinguished by the large spur at the base of the fore tibia in both the male and female. The species also is rather distinct in the unusually broad face and the nearly parallel 3rd and 4th veins of the wing.

*Thrypticus abdominalis* (Say)

FIGURES 47-49

*Chrysotus abdominalis* Say, 1829:169.*Xanthotricha cupulifer* Aldrich, 1896:339.

MALE.—Length 2.2 mm; wing 1.9 mm by 0.7 mm. Setae yellow. Face  $1/2$  as wide below as antennal segment 1. Palpus and proboscis yellow. Antenna yellow with segment 3 more brownish.

Thorax almost as high as long; setae yellow; 6 or 7 pairs of acrostichals, rows slightly diverging in last pair; 6 or 7 dorsocentrals, posterior 2 or 3 pairs enlarged; scutellum with 2 large bristles, rather large seta on lateral margin.

Legs including coxae yellow, setae yellow. Tibia II with distinct small yellowish anterodorsal near  $1/3$ , distinct pale apical ventrally. Relative lengths of leg segments from base as tibia I, 52; tarsus I, 24-12-10-6-6; tibia II, 60; tarsus II, 28-16-11-6-6; tibia III, 78; tarsus III, 18-24-14-8-8.

Wing (Figure 47) oval, clear; veins yellowish. Vein 2 essentially straight; vein 3 somewhat convergent with vein 4, only  $2/3$  as far from vein 4 at tip as opposite crossvein; vein 4 nearly straight. Crossvein perpendicular with base of vein 4,  $2/5-1/2$  as long as last of vein 5. Calypter pale with white setae; halter pale with knob whitish.

Abdomen with tergites 2-5 shining green, tergites 1 and 6 with sternites yellow; sternites with erect dense pubescence. Hypopygium (Figure 49) brownish black, elongate; appendages pale; outer lamellae pale, narrowly lanceolate with lax fringe of long setae; inner disk with dorsal crest; inner projections very short with a few long setae; aedeagus very long from near base of hypopygium.

FEMALE.—Head, thorax, legs, wing, and pre-abdomen mostly as in male. Genitalia (Figure 48) with sheath long, narrowed distally with slightly flaring margin; ovipositor reddish, pointed, with notches at base of distinct head.

COLLECTION DATA.—Dominica: 1 ♀ Anse Bouleau 10 Oct 1964 P. J. Spangler, 1 ♀ Clarke Hall 12-17 Nov 1964 P. J. Spangler, 2 ♂, 2 ♀ Clarke Hall, malaise trap 11-31 Jan 1965 W. W. Wirth, 1 ♂ Grande Savane 1 Feb 1965 W. W. Wirth, 1 ♂ Bells 20 Sept 1965 D. L. Jackson.

REMARKS.—The species is known from the eastern United States, Central America, and the

West Indies. The most distinctive feature of the species is the yellow base of the abdomen. Though the yellow tergites occur in both the male and female, there is some variation in the extent. The second tergite is sometimes yellow and the sixth tergite is sometimes green.

*Thrypticus parvulus* Van Duzee

FIGURES 50-52

*Thrypticus parvulus* Van Duzee, 1930a:86.

MALE.—Length 2.0 mm; wing 1.7 mm by 0.7 mm. Setae yellow. Face as wide below as antennal segment 1. Palpus and proboscis yellow. Antenna reddish.

Thorax as high as long, shining violet-green; setae yellow or brownish with pale reflections; ca. 10 pairs of acrostichals, rows much divergent posteriorly; 6 or 7 pairs of dorsocentrals, posterior 2 or 3 pairs enlarged; scutellum with 2 large bristles, rather large seta on lateral margin.

Legs including coxae yellow; setae yellow. Tibia II with distinct small dark anterodorsal near basal  $1/3$ , distinct paler apical ventrally. Relative lengths of leg segments from base as tibia I, 55; tarsus I, 24-12-7-4-6; tibia II, 60; tarsus II, 27-16-10-5-7; tibia III, 75; tarsus III, 17-20-12-7-7.

Wing (Figure 50) oval, clear; veins yellowish. Vein 2 curved slightly backward; vein 3 converging with vein 4, only  $1/2$  as far from vein 4 at tip as opposite crossvein; vein 4 hardly curving backward. Crossvein perpendicular to base of vein 4,  $3/5$  as long as last of vein 5. Calypter with tip dark, setae brownish; halter yellow.

Abdomen dark violet-green; setae brown with pale reflections. Hypopygium (Figure 51) brown, short, stout; appendages pale; outer lamella linear, fringed on outer edge; inner lamellae stouter, slightly darker; inner appendages very long with a few long hairs.

FEMALE.—Head, thorax, legs, wing, and pre-abdomen mostly as in male. Genitalia (Figure 52) with sheath long and bearing blunt spur dorsally; ovipositor reddish, rather stout, with distinct triangular head marked by notches, minutely serrate below.

COLLECTION DATA.—Dominica: 1 ♂ Anse Bouleau 10 Oct 1964 P. J. Spangler; 1 ♂ and 1 ♀

Clarke Hall, malaise trap 11–31 Jan 1965 W. W. Wirth; 1 ♂ Hillsborough Estate 15 Mar 1965 W. W. Wirth; 1 ♀ Manets Gutter 9 Sept 1965 D. L. Jackson.

REMARKS.—Van Duzee (1930a) was probably correct in relating his species to *Thrypticus aurinotatus* Van Duzee of the southeastern United States, and the West Indian species does sometimes show a rather golden or bronze color on the flattened posterior slope of the mesoscutum. The hypopygial lamellae of both species are particularly long and rather spreading, but those of *T. aurinotatus* are much wider and have more rounded tips.

### *Thrypticus violaceus* Van Duzee

FIGURES 54–56

*Thrypticus violaceus* Van Duzee, 1927b:5.

*Thrypticus setosus* Robinson, 1964:118.

MALE.—Length 2.0 mm; wing 1.6 mm by 0.6 mm. Setae brownish yellow. Face  $1/2$  as wide below as antennal segment 1. Palpus brownish yellow; proboscis dark yellowish. Antenna brown.

Thorax as high as long, bright shining green; setae yellowish; 9 pairs of acrostichals, rows with hind pair much diverging; dorsocentrals with posterior 2 or rarely 4 pairs enlarged; scutellum with 2 large bristles, quite large seta on lateral margin.

Legs including coxae yellow; setae yellow. Tibia II with distinct, rather dark, medium-sized antero-dorsal near basal  $1/3$ , distinct paler apical ventrally. Relative lengths of leg segments from base as tibia I, 52; tarsus I, 24–10–8–6–6; tibia II, 60; tarsus II, 32–16–10–7–6; tibia III, 85; tarsus III, 26–30–17–11–8.

Wing (Figure 55) oval, clear; veins yellowish. Vein 2 curving slightly backward; vein 3 converging with vein 4,  $1/2$  as far from vein 4 at tip as opposite crossvein; vein 4 curving slightly backward. Crossvein perpendicular to base of vein 5,  $2/3$  as long as last of vein 5. Calypter and setae pale; halter pale.

Abdomen with tergites dark, shining reddish green, basal sternites yellow; setae pale with yellow reflections. Hypopygium (Figure 54) mostly brown with edge of basal shield pale, elongate, basal  $1/2$  broad, tapering toward tip; appendages pale, forming very flat disk; outer appendages

forming rim of disk and each bearing two long slender hooked pale setae at tip; aedeagal sheath pale from base of hypopygium.

FEMALE.—Head, thorax, legs, wing, and pre-abdomen mostly as in male. Genitalia (Figure 56) with sheath rather long, narrow spur from middle of receding upper margin; ovipositor very stout with a distinct stout triangular head.

COLLECTION DATA.—Dominica: 1 ♂ and 2 ♀ Fond Colet 5–9 Oct 1964 P. J. Spangler; 1 ♂ Anse Bouleau 10 Oct 1964 P. J. Spangler; 1 ♀ 5–17 Nov 1964 P. J. Spangler, 2 ♂ and 3 ♀ malaise trap 8–20 Jan 1965 W. W. Wirth, 1 ♂ 12 May 1966 G. Steyskal, all at Clarke Hall; 1 ♀ Freshwater Lake 26 Aug 1965 D. L. Jackson.

REMARKS.—Specimens of *Thrypticus violaceus* have been seen from Florida, Haiti, Puerto Rico, and Dominica. The form of the species is generally similar to *T. abdominalis* but the yellow color of the abdomen is restricted to the sternites. The original description by Van Duzee is slightly inaccurate and the type specimen is very badly damaged, but the description does mention the distinctive apical hairs of the male hypopygial lamellae and the specimen does show the yellow sternites of the abdomen.

### *Thrypticus delicatus*, new species

FIGURE 53

MALE.—Length 1.2 mm; wing 1.1 mm by 0.4 mm. Setae brown. Face  $3/4$  as wide below as antennal segment 1. Palpus and proboscis yellow. Antenna brownish, segment 2 slightly yellowish.

Thorax about as high as long, in distorted specimen shining dark brownish violet; setae yellowish; ca. 5 pairs of acrostichals, posterior pairs not diverging; dorsocentrals with posterior 2 pairs enlarged; scutellum with 2 large bristles, minute seta on lateral margin.

Coxa II brownish on outer surface, legs including coxae I and III otherwise yellow. Relative lengths of leg segments from base as tibia I, 30; tarsus I, 10–8–4–4–4; tibia II, 40; tarsus II, 18–10–7–5–4; tibia III, 45; tarsus III, 8–13–7–5–5.

Wing rather oval, clear; veins yellowish. Vein 2 very slightly curved forward at extreme tip; vein 3 convergent with vein 4,  $1/2$  as far from vein 4 at tip as opposite crossvein; vein 4 curved



slightly backward. Crossvein perpendicular to base of vein 4,  $2/5$  as long as last of vein 5. Calypter and setae pale; halter pale.

Abdomen dark shining greenish; setae with yellowish reflections. Hypopygium (Figure 53) stout, shortly pedunculate, brown; appendages forming a small compact keeled disk, rim of narrow appressed appendages, keel and rim bearing some short hairs; central appendage partially in ventral groove of hypopygium.

FEMALE.—Unknown.

TYPE DATA.—Holotype ♂ from Dominica: South Chiltern Estate 18–19 Aug 1965 D. L. Jackson (USNM 72866).

REMARKS.—The new species is the smallest member of the genus on the island of Dominica. The species seems closest to *Thrypticus crinipes*, described below, but the latter differs in details of the hypopygium and in having longer curved hairs on the male fore tarsus.

#### *Thrypticus aequalis*, new species

FIGURES 57–59

MALE.—Length 1.5 mm; wing 1.4 mm by 0.5 mm. Setae brownish yellow. Face  $1/2$  as wide below as antennal segment 1. Palpus and proboscis yellow. Antenna yellow, segment 3 brown.

Thorax as high as long, dark shining green; setae yellowish; 6 pairs of acrostichals, rows not diverging posteriorly; dorsocentrals with 2 or 3 posterior pairs enlarged; scutellum with 2 large bristles, minute seta on lateral margin.

Coxae yellow with extreme bases brownish, basal  $1/2$  of outer surface of coxa II brownish, 5th segments of tarsi slightly brownish, legs otherwise yellow; setae pale. Tibia II with distinct rather small pale anterodorsal near basal  $1/3$ , a rather small apical ventrally. Relative lengths of leg segments from base as tibia I, 40; tarsus I, 16–8–5–4–6; tibia II, 45; tarsus II, 20–12–8–6–5; tibia III, 58; tarsus III, 15–15–9–6–6.

Wing (Figure 57) oval, clear; veins yellowish. Vein 2 very slightly bent forward at tip; vein 3 convergent with vein 4,  $2/3$  as far from vein 4 at tip as opposite crossvein; vein 4 bending slightly backward. Crossvein perpendicular to base of vein 4,  $1/2$  as long as last of vein 5. Calypter and setae pale; halter pale.

Abdomen dark shining green; setae brownish with yellow reflections. Hypopygium (Figure 58) brown, short pedunculate, tapering to appendages; appendages appressed into pointed narrow disk with a few short hairs apically; central appendage in slight groove.

FEMALE.—Head, thorax, legs, wing, and pre-abdomen mostly as in male. Genitalia (Figure 59) with sheath short, dorsal edge much produced; ovipositor slender, without differentiated tip.

TYPE DATA.—Holotype ♂ and 1 ♂ paratype from Dominica: Clarke Hall 12 June 1966 G. Steyskal (USNM 72867). Allotype ♀ Dominica; Clarke Hall, malaise trap 11–20 Jan 1965 W. W. Wirth. Additional paratypes from Dominica: 3 ♀ Clarke Hall, malaise trap 8–10 Jan 1965 W. W. Wirth.

REMARKS.—The new species is most easily distinguished by the equal length of the basal two segments of the hind tarsus. The female genitalia also seem very distinctive in the short, rather unspecialized sheath and in the slender, rather structureless ovipositor.

#### *Thrypticus subdissectus*, new species

FIGURES 60–63

MALE.—Length 1.7 mm; wing 1.5 mm by 0.6 mm. Setae brownish. Face as wide below as antennal segment 1. Palpus and proboscis yellow. Antenna blackish.

Thorax as high as long, dark shining green; setae brownish yellow; 6 or 7 pairs of acrostichals, rows not diverging posteriorly; dorsocentrals with 2 posterior pairs enlarged; scutellum with 2 large bristles, minute seta on lateral margin.

Legs including coxae yellow; setae yellow. Tibia II with distinct, dark, rather large anterodorsal near basal  $1/3$ , distinct apical ventrally. Relative lengths of leg segments from base as tibia I, 45; tarsus I, 22–10–7–5–6; tibia II, 50; tarsus II, 24–17–12–7–6; tibia III, 60; tarsus III, 15–20–13–10–8.

Wing (Figure 63) oval, clear; veins dark yellowish. Vein 2 very slightly curving forward at tip; vein 3 running close to vein 4 and converging,  $2/3$  as far from vein 4 at tip as opposite crossvein; last part of vein 4 straight. Crossvein perpendicular to base of vein 5,  $1/2$  as long as last of vein 5. Calypter and setae pale; halter pale.

Abdomen dark shining green; setae brownish

with yellowish reflections. Hypopygium (Figures 60, 61) brown, short, cylindrical; lamellae pale; armatures (Figure 61) diverging, with densely fringed, broadly truncate tips.

**FEMALE.**—Head, thorax, legs, wing, and preabdomen mostly as in male. Genitalia (Figure 62) with sheath rather short; ovipositor rather long and stout, with straight shaft and distinct head.

**TYPE DATA.**—Holotype ♂ and allotype ♀ from Dominica: Syndicate Estate 10 Aug 1965 D. L. Jackson (USNM 72868). Paratypes from Dominica: 1 ♀ Clarke Hall, malaise trap 8–10 Jan 1965 W. W. Wirth; 1 ♀ Bernard Estate near Portsmouth 20 Oct 1966 A. B. Gurney. Paratype from Puerto Rico: 1 ♂ Yauco-Lares road, km 29, 20 Jan 1954 J. Maldonado and S. Medina.

**REMARKS.**—The spreading appendages of the hypopygium are reminiscent of *Thrypticus dissectus* H. Robinson of the southeastern United States, but the shape of the hypopygium and details of the appendages are very different. The fringed truncate apices of the appendages of the new species are particularly distinctive.

### *Thrypticus crinipes*, new species

FIGURES 64–67

**MALE.**—Length 1.7 mm; wing 1.5 mm by 0.6 mm. Setae yellow with brownish bases. Face 1/2 as wide below as antennal segment 1. Palpus and proboscis yellowish. Antenna brown.

Thorax as high as wide, dark shining green; setae yellow; 6 pairs of acrostichals, rows not diverging posteriorly; dorsocentrals with 3 or 4 posterior pairs somewhat enlarged, last 2 pairs greatly enlarged; scutellum with 2 large bristles, minute seta on lateral margin.

Legs including coxae yellow; setae yellow. Tibia II with small anterodorsal near basal 1/3, small apical ventrally. Segments 2–4 of fore tarsus with fringe of longer, apically curved hairs dorsally (Figure 67). Relative lengths of leg segments from base as tibia I, 45; tarsus I, 18–9–7–5–6; tibia II, 45; tarsus II, 22–13–10–6–5; tibia III, 60; tarsus III, 14–18–(remainder broken).

Wing (Figure 64) oval, clear; veins yellowish. Vein 2 bending slightly forward at tip; vein 3 converging with vein 4, 1/2 as far from vein 4 at tip as opposite crossvein; last of vein 4 straight.

Crossvein perpendicular to base of vein 4, 1/2 as long as last of vein 5. Calypter and setae pale; halter pale.

Abdomen dark shining green; setae brownish with pale reflections. Hypopygium (Figure 66) brownish, pedunculate, short, abruptly rounded below at apex; appendages pale with short pale hairs, forming loose disk; outer appendages slender, loosely appressed; central projection straight, from ventral groove of hypopygium.

**FEMALE.**—Head, thorax, wing, and preabdomen mostly as in male. Tibia II with anterodorsal slightly larger; fore tarsus without longer dorsal hairs; lengths of segments of hind tarsus as 12–18–10–6–7. Genitalia (Figure 65) with sheath rather long; ovipositor with sharp-pointed triangular head delimited by distinct notches.

**TYPE DATA.**—Holotype ♂ from Dominica: South Chiltern Estate 18–19 Aug 1965 D. L. Jackson (USNM 72869). Allotype ♀ from Dominica: Clarke Hall, malaise trap 8–10 Jan 1965 W. W. Wirth.

**REMARKS.**—The most distinctive feature of the new species is the fringe of hairs on the male fore tarsus.

### *Micromedetera*, new genus

Minute and rather delicate with dark metallic to blackish body. Eyes closely approximated on lower part of face, face in female only slightly wider, without setae; clypeus distinct, becoming slightly wider below; front broad, broader above. Palpus small. Antenna with all segments short; segment 1 bare above; segment 3 conical; arista apical, as long as height of head. Posterior surface of head nearly bare, strongly concave above, lower postocular surface with a row of very fine pale setae.

Thorax strongly arched with posterior slope flattened. Acrostichals absent; 4 or 5 pairs of slender dorsocentrals; only 3 large bristles laterally on mesoscutum, 1 notopleural, 1 anterior interalar and 1 posterior supraalar; scutellum with 1 pair of strong, rather widely separated bristles. Legs slender, without noticeable setae.

Wing oval, anal angle poorly developed; vein 2 reaching only slightly beyond middle of wing; veins 3 and 4 curving toward each other beyond

crossvein, sometimes more parallel at tips; crossvein shorter than last part of vein 5. Calypter brownish with rather pale setae; knob of halter blackish.

Abdomen somewhat longer than thorax, long-tapering, without prominent setae. Hypopygium short and broad, on short slender peduncle, armed with hook or finger-like appendages toward one side of upper surface.

TYPE-SPECIES.—*Micromedetera archboldi*, new species.

REMARKS.—The new genus is related to the complex with *Cyrturella* of Europe and *Microcyrtura* and *Microchrysotus* of Mexico. The wing venation is most like *Microchrysotus*, and only this last and *Micromedetera* have the second vein so short and the fourth vein curving forward in

the last part. The genus *Microchrysotus* differs by the ornamented palpi and fore tarsi of the male. The face of the new genus is most like that of *Microcyrtura*, with the gradually converging sides and the elongate clypeus becoming slightly wider below. The genus *Microcyrtura* also has the thorax strongly arched but differs by the very long arista and the venation of the wing. The new genus is distinct from all members of the group by the unique hypopygial structure with projections on the upper surface toward one side. The exact form of these projections is different in each of the three species presently known.

Only the following three previously undescribed species are known—one species from Dominica, a second from Jamaica, and the third from Panama.

#### Key to the Species of *Micromedetera*

1. Wing with veins 3 and 4 close and either parallel or slightly spreading at extreme tips; hypopygium with very large thornlike projection on upper surface (Panama) .... *M. shannoni*  
Wing with veins 3 and 4 laxly convergent at tips, not quite parallel; hypopygium with crest on upper surface having only slender projections ..... 2
2. Wing with veins 3 and 4 separated by 0.06 mm at tips and 0.11–0.13 mm at widest point, vein 4 ending at tip of wing; hypopygium with crest of 5 stout setae above (Dominica) ..... *M. archboldi*  
Wing with veins 3 and 4 separated by 0.04 mm at tips and 0.10 mm at widest point, vein 4 ending very slightly before tip of wing; hypopygium with only 2 stout setae above (Jamaica) ..... *M. wirthi*

#### *Micromedetera archboldi*, new species

FIGURES 76, 77

MALE.—Length 1.0 mm; wing 1.1 mm by 0.5 mm. Face and front dark metallic bluish, lower face and palpus obscured by yellowish gray pollen; proboscis yellowish brown. Antenna brown.

Thorax dark bluish, nearly obscured by brownish pollen above, more grayish pollen on pleura. Setae dark; 4 distinct pairs of dorsocentrals, anterior 5th pair very small.

Legs slender; most of fore coxa, bases of middle and hind coxae, distal segments of tarsi, and, to slight extent, upper edges of femora brownish, legs otherwise yellow. Tarsi plain; relative lengths of segments from base as tarsus I, 18–10–8–5–5; tarsus II, 25–12–7–4–5; tarsus III, 16–15–9–6–5.

Wing (Figure 76) clear; veins brownish. Veins

3 and 4 rather widely separated at tips (0.06 mm), vein 4 ending at wing apex; crossvein 0.08 mm long; last of vein 5 0.22 mm long.

Abdomen brown with bronze tinges; setae dark. Hypopygium (Figure 77) brown, as high as wide, with crest of 5 slender finger-like appendages above to one side, small pubescent appendage below.

FEMALE.—Head, thorax, legs, wing, and pre-abdomen essentially as in male.

TYPE DATA.—Holotype ♂ and allotype ♀ from Dominica: Dleau Morne Laurent, on rocks wet from spray, at side of river, 21 Mar 1964 H. Robinson (USNM 72870).

REMARKS.—The new species is most distinct in the more widely separated third and fourth veins of the wing and by the more globose hypopygium bearing a crest of five finger-like projections.

*Micromedetera shannoni*, new species

FIGURES 68-71

MALE.—Length 1.0 mm; wing 1.0 mm by 0.4 mm. Face and front (Figure 68) metallic green dulled with yellowish pollen. Palpus brown with small brownish hairs; proboscis yellowish brown. Antenna (Figure 69) brown.

Thorax blackish brown dulled with brown pollen above, more grayish pollen on pleura. Setae dark; 4 distinct pairs of dorsocentrals, anterior 5th pair very small.

Legs slender; bases of coxae dark brownish, legs otherwise yellowish. Tarsi plain; relative lengths of segments from base as tarsus I, 8-4-3-2-3; tarsus II, 11-5-3-2-2; tarsus III, 7-6-4-3-2.

Wing (Figure 70) clear; veins brownish. Veins 3 and 4 running very close and nearly parallel for short distance at tips, vein 4 ending distinctly before wing apex; crossvein nearly 2/3 as long as last of vein 5.

Abdomen black with greenish tinges, dulled with brownish pollen. Hypopygium (Figure 71) black, with a short yellow hooklike appendage above to one side, a small pubescent appendage below.

FEMALE.—Not known.

TYPE DATA.—Holotype ♂ from Panama Canal Zone: Red Tank, 14 Apr 1923 R. C. Shannon (USNM 72871).

REMARKS.—The new species is most distinct in the parallel distal portions of the third and fourth wing veins and in the boxlike hypopygium bearing the very stout thorn above.

*Micromedetera wirthi*, new species

FIGURES 72-75

MALE.—Length 0.9 mm; wing 1.0 mm by 0.4 mm. Face and front (Figure 72) dark, face obscured by whitish pollen, clypeus with slightly more brownish pollen; front obscured with dark brown pollen. Palpus dark with some whitish pollen; proboscis yellowish brown. Antenna brown.

Thorax (Figure 73) dark metallic bluish or violet, almost totally obscured by whitish pollen, pleura more brownish with slightly thinner whitish pollen. Setae dark; 5 pairs of dorsocentrals,

anterior 2 pairs small, 4th pair very slender and set nearer 5th pair than 3rd.

Legs slender; coxae, upper edges of femora, 5th segments of tarsi, and tips of other tarsal segments rather brownish, legs otherwise pale. Tarsi plain; relative lengths of segments from base as tarsus I, 16-10-6-4-5; tarsus II, 24-10-8-5-4; tarsus III, 14-12-8-5-5.

Wing (Figure 74) clear; veins dark brown. Veins 3 and 4 rather close at tips (0.04 mm) with distal parts not becoming quite parallel, vein 4 ending very slightly before wing apex; crossvein 0.06 mm long; last part of vein 5 0.20 mm long.

Abdomen brown; setae dark, minute. Hypopygium (Figure 75) brown with slight whitish pollen, distinctly broader than high; 2 stout, curved, brownish yellow stylets on upper surface to one side, small, slightly pubescent appendage below.

FEMALE.—Not known.

TYPE DATA.—Holotype ♂ from Jamaica: Runaway Bay, 16-28 Feb 1969 W. W. Wirth (USNM 72872).

REMARKS.—The most distinctive features of the new species are the rather closely converging third and fourth wing veins and the broad, rather flattened hypopygium bearing a few slender stylets above toward one side.

*Dominicomomyia*, new genus

Rather small with stout body; seta mostly dark. Face with straight parallel sides, transverse suture weak; front broad, broader above. Palpus not ornamented. Pseudotracheae (Figure 83) weakly geminately sclerotized; hypopharynx (Figure 82) with tip slightly deflexed, slightly notched ventrally; epipharyngeal armature (Figure 82) with pair of long, rather scabrous prongs. Antenna with all 3 segments short; segment 1 bare above; segments 1 and 2 truncate apically, segment 2 ringed with series of small setulae; segment 3 very short, circular from anterior view; arista apical, about as long as height of head. Head distinctly excavated behind vertex; lower postocular surface with setae rather small, uniseriate.

Thorax with mesoscutum weakly arched, posterior slope slightly but distinctly flattened; acrostichals small, biseriate; dorsocentrals large; scutellum rather strongly rounded, with 1 pair of large,

widely separated bristles. Fore and middle coxae with numerous hairs anteriorly, longer setae distally; middle and hind coxae with a large seta toward outside. Femora without distinct preapical setae.

Wing oval, anal margin not prominent. Veins 2, 3, and 4 nearly straight and parallel beyond crossvein; crossvein not longer than last part of vein 5; vein 6 represented by slight fold.

Abdomen short, cylindrical. Hypopygium small, capping tip of preabdomen, with distinct appendages projecting downward, primary appendage (Figure 80) trilobed. Female genitalia with 1 pair of dornen above, a comb of distinct short setae below.

**TYPE-SPECIES.**—*Dominicomymia chrysotimoides*, new species.

**REMARKS.**—The new genus is placed in the Medeterinae on the basis of the face not being obscured with pollen and not being notably narrower in the male, the antenna having a third segment not laterally compressed, the femora lacking preapicals, and the female genitalia having a reduced number of dornen. Also, the hypopharynx has a notch which is reminiscent of ornamentation on the ventral surface of the hypopharynx of other Medeterinae. Such ornamentation is not known from other subfamilies of the Dolichopodidae. Relationship within the subfamily seems closest to the new genus *Cryptopygiella* on the basis of the wing venation and general body form, but the structure of the male genitalia is particularly distinctive in the latter.

The genus contains only the following single species.

***Dominicomymia chrysotimoides*, new species**

FIGURES 78–83

**MALE.**—Length 2.0 mm; wing 2.2 mm by 0.8 mm. Face and front metallic green with very slight gray pollen, face twice as wide as antennal segment 3. Palpus yellow with a few smaller setae and 1 larger apical seta; proboscis with yellow base and darker tips. Antenna yellowish. Lower postocular setae pale.

Thorax metallic greenish with slight brownish pollen above, grayish pollen on pleura, hind margin of pleura partly yellowish; ca. 10 pairs of acros-

tichals; 5 pairs of dorsocentrals; scutellum with seta on lateral margin very minute or lacking.

Legs yellow with bases of middle and hind coxae and 5th segments of tarsi slightly brownish. Fore tibia plain; middle tibia with distinct antero-dorsal near basal 1/3, a few very minute postero-dorsals and ventrals, 3 rather large apicals; hind tibia with a few minute dorsals. Relative lengths of leg segments from base as tibia I, 35; tarsus I, 34–22–16–10–10; tibia II, 80; tarsus II, 40–30–22–12–7; tibia III, 100; tarsus III, 12–42–20–12–8.

Wing (Figure 78) oblong-oval, clear; veins dark yellowish. Veins 2, 3, and 4 all straight and parallel beyond middle of wing, vein 3 ending slightly before wing apex, vein 4 ending slightly farther behind apex. Crossvein perpendicular to base of vein 4, as long as last of vein 5. Margin of calypter and setae dark; halter pale.

Abdomen with tergites brownish with green reflections and slightly yellowish margins; sternites pale. Hypopygium (Figures 79–81) small, brown; appendages short; lamella small and appressed with pale setae; armatures (Figure 80) trilobed with lobes of differing lengths and bearing distinctive apical setae, apical seta of 2 lobes with broadened tip; a pair of long slender spurs and a smaller setiferous appendage also present.

**FEMALE.**—Head, thorax, legs, wing, and preabdomen essentially as in male.

**TYPE DATA.**—Holotype ♂ and 1 ♂ paratype from Dominica: Clarke Hall 27 Feb 1964 H. Robinson (USNM 72873). Allotype ♀ and 3 ♂ paratypes from Dominica: Clarke Hall 28 Feb 1964 H. Robinson. Additional paratypes from Dominica: 11 ♂ and 3 ♀ 2 Mar, 2 ♂ and 1 ♀ 14 Mar, 1 ♀ 11 Apr 1964 H. Robinson, all at Clarke Hall; 2 ♂ Blenheim River 4 Mar 1964 H. Robinson.

**REMARKS.**—Most specimens of the new species were taken from artificial substrates such as the old cement cistern on the Clarke Hall Estate or the base of a bridge. A few specimens, however, were found on the trunk of a palm tree, and the latter might be the natural habitat of the species.

***Cryptopygiella*, new genus**

Minute with rather stout body. Face narrower than front, becoming narrowest in middle, transverse suture weak; front broad, only slightly



broader above; face and front metallic with only slight pollen. Palpus not ornamented. Pseudotracheae (Figure 88) unsclerotized; hypopharynx (Figures 89, 90) with tip slightly deflexed, with forked spur ventrally; epipharyngeal armature with pair of long smooth prongs. Antenna with all 3 segments short; segment 1 bare above; segments 1 and 2 truncate apically, segment 2 ringed with short dark setae; segment 3 very short, conical, round from anterior view; arista apical, slightly longer than height of head. Head distinctly excavated behind vertex; lower postocular surface with setae minute, uniseriate.

Thorax with mesoscutum slightly rounded with slightly flattened posterior slope; acrostichals small, biseriate; dorsocentrals longer posteriorly; scutellum strongly rounded, more sharply rounded in middle, with 1 pair of large setae rather widely separated. Fore and middle coxae with numerous hairs anteriorly, scarcely longer setae distally; hind coxa with a large seta outside. Femora without distinct preapical setae.

Wing rather oval, anal margin not prominent. Veins 3 and 4 straight and parallel beyond crossvein; crossvein much shorter than last of vein 5; vein 6 represented by slight fold.

Abdomen slightly but distinctly longer than thorax, flattened dorsally in female. Hypopygial capsule (Figures 85–87) minute, without external appendages. Female genital plate (Figure 160) without crest of dornen.

**TYPE-SPECIES.**—*Cryptopygiella musaphila*, new species.

The new genus is closely related to the preceding new genus, *Dominicomymia*, as evidenced by such features as the general body form, wing venation, head and antenna structure, and vestiture of the legs. Differences in certain details are striking, however, especially details of the mouthparts and genitalia. The pseudotracheae of the labellae are geminately sclerotized in *Dominicomymia* but unsclerotized in *Cryptopygiella*; the hypopharynx has a ventral specialization in both genera, but it is only notched in the former while it bears a forked spur in the latter; the hypopygium is medium sized with distinct appendages in *Dominicomymia* but is uniquely diminutive with no external appendages in *Cryptopygiella*. The female of *Cryptopygiella* is also distinctive in the flattened form of the abdomen and the rodlike thickenings

in the lateral walls of the extensible genitalia.

Only the following single species is known for the genus.

### *Cryptopygiella musaphila*, new species

FIGURES 84–90, 160

**MALE.**—Length 1.2 mm; wing 1.3 mm by 0.6 mm. Head with setae brownish. Face as wide below as antennal segment 3, face and front metallic bluish green with only slight pollen. Palpus brownish with a few small but distinct setae; proboscis yellowish with darker tips. Antenna yellow; segment 2 with 1 particularly strong seta below. Lower postocular setae pale.

Thorax bluish green with slight pollen, pleura more brownish; setae yellowish; 6 pairs of acrostichals; 5 pairs of dorsocentrals with hind pairs progressively larger; scutellum with minute seta on lateral margin.

Legs yellow with 5th tarsal segment brownish, hind femur and fore tibia slightly brownish above; setae mostly pale. Fore and hind tibiae plain; middle tibia with a rather large, brownish anterodorsal near 1/2, only small apicals. Relative lengths of leg segments from base as tibia I, 25; tarsus I, 12–4–3–3–5; tibia II, 45; tarsus II, 13–8–5–3–5; tibia III, 45; tarsus III, 8–12–7–4–5.

Wing (Figure 84) oblong-oval, clear; veins yellow. Vein 2 slightly sinuous, slightly closer and becoming more parallel to vein 3 near tip; vein 3 and last of vein 4 straight and parallel, vein 4 ending at wing apex; bases of veins 4 and 5 close and nearly parallel; crossvein perpendicular to base of vein 5, ca. 1/5 as long as last of vein 5. Calypter and its short setae pale; halter pale.

Abdomen metallic bluish green, tergites not flattened with extended edges; setae very short, sparse, dark. Hypopygial capsule (Figures 85–87) minute, without external appendages; internal structure in form of long shaft attached to a hinged armature.

**FEMALE.**—Head, thorax, legs, and wing similar to male. Abdomen strongly flattened above with some longitudinal depressions, tergites violet; tip of abdomen more swollen, cylindrical; distal segments long extensible with very long, narrow sclerites along lateral surfaces (Figure 160).

**TYPE DATA.**—Holotype ♂, 1 ♂ and 3 ♀ para-

types from Dominica: La Ronde River 15 Feb 1964 H. Robinson (USNM 72874). Allotype ♀ and 1 ♀ paratype from Dominica: Rosalie River 28 Jan 1964 H. Robinson. Additional paratypes from Dominica: 10 ♂ and 14 ♀ 23 Jan–13 Feb 1964 H. Robinson, 1 ♂ 21–31 Jan 1965 light trap W. W. Wirth, 1 ♂ and 2 ♀ 13–27 Apr 1966 R. J. Gagné, 2 ♀ 30 May–2 June 1966 G. Steyskal, all at Clarke Hall; 1 ♀ Springfield Estate 1 Feb 1964, 3 ♂ and 2 ♀ South Chiltern Estate 6–7 Feb 1964, 1 ♀ Rosalie River 14 Feb 1964, all H. Robinson.

REMARKS.—The species seems very common running over the surface of banana leaves. The small size and minute male genitalia are reminiscent of the original description of *Thrypticus singularis* Aldrich of St. Vincent. Aldrich's (1896) brief description does indicate that his species has a more slender hypopygium and a wing resembling that of *Thrypticus abdominalis*. No material of Aldrich's species has been seen in this study, but the description would indicate the species is a true *Thrypticus*.

### Subfamily XANTHOCHLORINAE

#### Genus *Xanthina* Aldrich

Small to medium sized with mostly yellow body; setae mostly black. Face very narrow below, sometimes obliterated below in male, broader above, without setae; front broad, much broader above. Palpus pale, pollinose, usually enlarged and sometimes very modified in male, bearing setae or scales;

proboscis often much produced; pseudotracheae 8 or more, unsclerotized. Antenna with segments 1 and 2 short, segment 1 bare above; segment 2 produced above and on inside edge, ringed with small black setae, 1 large black seta above; segment 3 small to very large with 1 short point or 2 very long points; arista long, slightly subapical or in large notch. Lower postocular setae uniseriate, rather long, pale.

Thorax with mesoscutum rounded anteriorly, flattened on posterior slope; acrostichals small, biseriate; dorsocentrals large; scutellum with pair of widely separated, large bristles, very minute hair on short lateral margin; 1 pale seta above fore coxa. Legs with ventral hairs and setae usually pale, other hairs and larger setae dark. Fore and middle coxae with small hairs and a few large apicals anteriorly, hind coxa with 1 distinct seta on outer surface. Femora without dorsal preapicals; femur II with 1 ventral preapical, femur III with 1 or 2 ventral preapicals. Male hind basitarsus with small transverse groove and a spur beyond the comb.

Wing oval. Vein 1 short; vein 2 long; veins 3 and 4 diverging in basal 1/2 or more, either or both curving to be parallel at tips; wing apex between tips of veins 3 and 4; vein 5 nearly perpendicular to bases of vein 4 or 5, not longer than last of vein 5; vein 6 represented by very slight or no fold.

Abdomen as long as thorax or shorter, cylindrical or often somewhat flattened; 4 or 5, rarely 6, tergites visible. Hypopygium small, globular,

### Key to the Species of *Xanthina* in Dominica

1. Wing ca. 2.5 mm long; hind tibia with 4 posterodorsals; middle tibia of male much distorted with ventral swelling near base; male palpus elongate, yellow, with 3 or 4 stout apical setae ..... *X. persetosa*  
 Wing ca. 2.0 mm long; hind tibia with 1–3 posterodorsals; middle tibia of male essentially plain; male palpus rounded, mostly white pollinose, without more than 1 stout apical seta ..... 2
2. Wing vein 4 distinctly bent at crossvein, all of last part parallel with vein 3; hind tibia with only 1 small posterodorsal; middle femur with 4 very large posteroventrals; hypopygial lamella filamentous ..... *X. acuticornis*  
 Wing vein 4 not distinctly bent at crossvein, only last 1/2–1/3 parallel with vein 3; hind tibia with 3 posterodorsals; middle femur without very prominent posteroventrals; hypopygial lamella not filamentous ..... 3
3. Segment 3 of male antenna about as long as wide, blunt with nearly apical arista; male palpus with reddish margin, with no distinct setae ..... *X. rubromarginata*  
 Segment 3 of male antenna twice as long as wide, acute, with arista inserted near distal 1/3; male palpus without reddish margin, with numerous setae ..... *X. dominicensis*

usually capping tip of preabdomen but sometimes sunken deeply into tip; basal shield usually with a few large setae. Female genitalia with crest of dornen.

REMARKS.—The genus seems common in moist, shaded habitats in the Neotropical region. The following four species are known from Dominica.

*Xanthina persetos*, new species

FIGURES 163–165

MALE.—Length 2.4 mm; wing 2.6 by 0.9 mm. Setae mostly dark. Eyes contiguous in middle, small upper and lower facial triangles white pollinose; front blackish dulled with slight yellowish pollen. Palpus (Figure 165) as long as face, narrowly elliptical, yellowish with many black setae, 3 stout setae at tip; proboscis pale yellow. Antenna reddish yellow, darker on upper edge of segment 3; segment 3 rounded, as broad as long, blunt, arista essentially apical.

Thorax yellow; 7 or 8 pairs of acrostichals; 6 distinct pairs of dorsocentrals.

Fore coxa with prominent distal setae including 1 extremely long apical. Fore femur with many erect pale anteroventral and posteroventral setae, 1 at distal  $\frac{3}{4}$  long, 2 erect black anteroventrals near base; middle femur with a few small erect dark anteroventrals near base, dense comb of long curved pale posteroventral setae along distal  $\frac{2}{3}$ . Tibia I with scarcely distinct anteroventral at basal  $\frac{1}{3}$ , longer hairs along posterior surface; tibia II much distorted, bulbous ventrally near basal  $\frac{1}{4}$ , narrowed and somewhat twisted near middle, scattered slender erect setae anteriorly, strong anterodorsals near  $\frac{1}{3}$  and  $\frac{1}{2}$ , posterodorsal near basal  $\frac{1}{3}$ , cluster of very long, dark setae on posterior side of basal swelling, shorter paler erect setae on anterior  $\frac{1}{2}$ , short erect setae over distal ventral surface, 2 apicals; tibia III with 1 anterodorsal near base, 4 posterodorsals, 1 sub-apical ventrally, apex with distinct depression dorsally. Segments of tarsus II usually folded, segment 1 slightly flattened with 3 stout setae at base ventrally, many long slender setae distally including 2 very long apicals dorsally; segment 2 with many long slender setae, a row of stouter setae posteriorly, more numerous slender setae ventrally. Relative lengths of segments of tarsi from base as

tarsus I, 17–6–5–5–4; tarsus II, 19–9–9–7–10; tarsus III, 14–20–15–10–9.

Wing (Figure 163) narrowly oval, slightly fuscous; veins brown. Vein 2 essentially straight; veins 3 and 4 parallel beyond crossvein, curving slightly backward distally, vein 3 curved very slightly forward at tip. Crossvein  $\frac{3}{4}$  as long as last of vein 5. Knob of halter pale.

Abdomen slightly flattened toward base; 5 tergites visible, blackish above on tergites 1–4 and on whole of tergite 5, yellow on sides of tergites 1–4 and on sternites; sternite 4 with pair of long slender black submarginal setae. Hypopygium (Figure 164) blackish, small, globose, capping tip of preabdomen; basal shield with 2 or 3 strong bristles and many weaker setae; outer appendages long, pale, slender, fringed by slender pale setae on both margins, few setae on basal  $\frac{1}{3}$  of inner margin; inner appendages brownish.

FEMALE.—Face very narrow below but continuous to mouth; palpus  $\frac{2}{3}$  as long as face, oval, with numerous short black setae and 1 large apical. Fore coxa with less prominent setae; fore and middle femora without longer setae ventrally; middle tibia plain with 2 anterodorsals near  $\frac{1}{4}$  and  $\frac{1}{2}$ , 1 posterodorsal near  $\frac{1}{3}$ , 1 or 2 posteroventrals, 3 apicals; tibia III with 2 anterodorsals, 4 posterodorsals, 3 apicals; tarsus II plain, 20–13–12–8–6. Abdomen yellow on sides of all tergites.

TYPE DATA.—Holotype ♂, allotype ♀, and 1 ♂ paratype from Dominica: Trafalgar Falls 15 Mar 1964 H. Robinson (USNM 72875). Additional paratypes from Dominica: 1 ♀ Fond Figs River, rain forest 3 Feb 1965 W. W. Wirth; 1 ♂ Fond Figs River, 400' 29 Apr 1966 R. J. Gagné.

REMARKS.—The new species is most easily distinguished by the very strongly modified middle tibia of the male. A closely related undescribed species from Puerto Rico has been seen. It has a second anterodorsal on the hind tibia, the middle tibia not bulbous or twisted, and the posteroventral comb of the middle femur on only the distal half.

*Xanthina acuticornis*, new species

FIGURES 166, 167

MALE.—Length 1.8 mm; wing 2.0 mm by 0.7 mm. Setae mostly black. Eyes contiguous in mid-

dle, small upper and much smaller lower facial triangles white pollinose; front blackish, scarcely dulled by slight yellowish pollen. Palpus  $1/2$  as long as facial area, broadly oval, whitish with scattered black setae, 1 longer apical; proboscis pale yellow. Antenna with segments 1 and 2 and base of segment 3 yellow; segment 3 dark above and on distal  $2/3$  long-triangular, acute, twice as long as wide; arista about as long as segment 3, inserted near dorsal edge at distal  $1/3$ .

Thorax yellow; mesoscutum scarcely flattened posteriorly; 8 or 9 pairs of acrostichals; 6 pairs of distinct dorsocentrals.

Fore coxa with numerous long pale-brownish setae especially on outer anterior surface. Fore femur with series of 8 distinct erect black anteroventrals; femur II with 8 small erect anteroventrals, 4 very large posteroventrals along basal  $1/2$ ; femur III with a few longer darker anteroventrals and posteroventrals distally. Tibia II with anterodorsals near  $1/4$  and  $1/2$ , posterodorsal near  $1/3$ , numerous rather long, slender ventrals along distal  $2/3$ , 3 apicals; tibia III with 1 small anterodorsal near base, 3 large posterodorsals along basal  $2/3$ , 2-4 apicals. Relative lengths of segments of tarsi from base as tarsus I, 16-4-3-3-3, basitarsus with numerous rather long, black setae ventrally on basal  $2/3$ ; tarsus II, 18-10-8-6-5; tarsus III, 10-14-10-8-5.

Wing (Figure 166) oval, clear; veins brown. Vein 2 nearly straight; veins 3 and 4 parallel beyond crossvein, scarcely curving backward. Crossvein about as long as last of vein 5. Knob of halter yellow.

Abdomen appearing truncated; 5 narrow tergites visible, tergites brown along middle with sides and sternites yellow. Hypopygium (Figure 167) dark brown, rather large, globose, capping tip of preabdomen; basal shield with numerous setae; outer appendages pale, very long and slender, fringed on both margins with long curved pale hairs, with spur at base on lower margin; inner appendages pale brown, narrowly lamellate, with near right-angle in middle, with long stout brown seta on inner surface of angle as long as rest of appendage, appendage notched below just before tip.

FEMALE.—Unknown.

TYPE DATA.—Holotype ♂ from Dominica: Fond Figs River 25 Jan 1965 W. W. Wirth (USNM

72876). Paratype from Dominica: 1 ♂ Clarke Hall, light trap 21-31 Mar 1965 W. W. Wirth.

REMARKS.—Distinctive features of the new species include the long-triangular third antennal segment, the fourth wing vein distinctly bent at the crossvein, and the very long, slender hypopygial lamellae.

### *Xanthina rubromarginata*, new species

FIGURES 168, 169

MALE.—Length 2.2 mm; wing 2.0 mm by 0.6 mm. Setae mostly black. Eyes contiguous in middle and below, small upper facial triangle white pollinose; front greenish black dulled by slight yellowish pollen. Palpus  $1/2$ - $2/3$  as long as facial area, broadly obovate with a few small black setae, whitish pollinose with reddish apical margin; proboscis yellow. Antenna mostly yellow; segment 3 blackish above, slightly longer than basal 2 segments combined, broadly triangular, narrowly rounded at apex; arista inserted slightly but distinctly above tip of segment 3.

Thorax yellow; 7-9 pairs of acrostichals; 6 pairs of distinct dorsocentrals.

Fore femur with series of anteroventrals, with those on basal  $1/3$  longer, 3 or 4 longer posteroventrals near apex; middle and hind femora hairy with short erect setae ventrally, middle femur with small preapical above, 2 preapicals ventrally, hind femur with setae in posteroventral row to  $1/2$  as long as width of femur. Tibia I plain; tibia II with 2 anterodorsals at  $1/4$  and  $1/2$ , 1 posterodorsal at  $1/4$ , 3 apicals; tibia III with 3 anterodorsals, 3 posterodorsals, 3 apicals. Relative lengths of segments of tarsi from base as tarsus I, 15-8-6-4-4; tarsus II, 17-9-7-5-3; tarsus III, 10-13-9-7-5.

Wing (Figure 169) narrowly oblong-oval, clear; veins brown. Vein 2 nearly straight; vein 3 curved slightly backward in distal  $1/3$ ; vein 4 curved slightly forward beyond crossvein, nearly parallel to slightly convergent with vein 3 in distal  $1/2$ . Crossvein  $2/3$  as long as last of vein 5. Knob of halter pale.

Abdomen cylindrical, shining black along middle of back, yellow below and on sides. Hypopygium (Figure 168) small, globose, capping tip of preabdomen; basal shield with 2 or 3 strong setae

and many weaker setae; appendages pale, outer short-triangular, usually reflexed.

**FEMALE.**—Face very narrow below but distinct to mouth; palpus with more black setae, 1 large apical, without reddish margin. Fore femur without longer setae below. Abdomen with black on tergites 1–5, tergites 6 and 7 and genitalia yellow.

**TYPE DATA.**—Holotype ♂ from Dominica: Clarke Hall 3 Mar 1964 H. Robinson (USNM 72877). Allotype ♀, 11 ♂ and 2 ♀ paratypes from Dominica: Trafalgar Falls 15 Mar 1964 H. Robinson. Additional paratypes from Dominica: 3 ♂ near Belfast 31 Jan 1964 H. Robinson; 5 ♀ 7–8 Feb 1964 H. Robinson, 1 ♀ 7 Feb 1964 D. F. Bray, 3 ♂ 2, 20 Feb 1965 W. W. Wirth, all at South Chiltern Estate; 8 ♂ and 2 ♀ 25 Feb–2 Mar 1964 H. Robinson, 1 ♀ 18 Jan, 2 ♂ 16 Feb 1965 cocoa trail, 1 ♂ 21–31 Jan 1965 light trap, 3 ♂ 11–20 Mar 1965, all W. W. Wirth, 1 ♂ and 2 ♀ 3–24 Apr 1966 R. J. Gagné, 4 ♀ 2–6 June 1966 G. Steyskal, all at Clarke Hall; 3 ♂ and 2 ♀ Clarke Hall, Manets Gutter 1–7 Mar 1965 W. W. Wirth; 1 ♂ 16 Mar 1964 H. Robinson, 1 ♂ and 1 ♀ 3–9 Feb 1965 rain forest, W. W. Wirth, 1 ♀ 29 Apr 1966 400' R. J. Gagné, all Fond Figes River; 1 ♂ Pont Casse, 1.5 miles north, 12 Feb 1965, 1 ♀ Cabrit Swamp, light trap 23 Feb 1965, both W. W. Wirth; 1 ♂ Tareau Cliffs, La Fanchette 13 Apr 1966 R. J. Gagné.

**REMARKS.**—The new species is very closely related to *Xanthina flava* Aldrich of St. Vincent, but the type specimen of the latter, borrowed from the British Museum, shows the crossvein of the wing longer compared to the last part of the fifth vein and shows the palpus without the slight truncation and thickening of the margin and without any black setulae. The original Aldrich description indicates the antenna is "wholly yellow," but the type is broken and this cannot be verified.

### *Xanthina dominicensis*, new species

FIGURES 170, 171

**MALE.**—Length 1.5 mm; wing 1.9 mm by 0.6 mm. Setae mostly black. Eyes contiguous in middle, small upper facial triangle white pollinose; front blackish, scarcely dulled by slight yellowish pollen.

Palpus 1/2 as long as facial area, broadly rounded, white pollinose with a few pale brownish setae distally, 1 rather long apical; proboscis pale yellow. Antenna with segments 1 and 2 yellow; segment 3 brownish, long-triangular, acute, twice as long as wide; arista about as long as segment 3, inserted near dorsal edge at distal 1/3.

Thorax yellow; 6 or 7 pairs of acrostichals; 6 pairs of distinct dorsocentrals.

Fore coxa with rather pale setae, 1 or 2 series of long setae along outer anterior surface. Fore femur with series of 8 distinct erect brownish anteroventrals; middle femur with series of rather erect, very short posteroventrals of which the basal 3 or 4 are prominent; hind femur with series of ca. 9 long posteroventrals along basal 1/2, a few additional long setae, including some anteroventrals, near base. Tibia I with a few long setae along posterior surface; tibia II with anterodorsals at 1/4 and 3/5, posterodorsal at 1/3, 2 or 3 rather small apicals; tibia III with 3 anterodorsals, 3 posterodorsals, ca. 4 apicals. Relative lengths of segments of tarsi from base as tarsus I, 18–8–5–3–3, basitarsus with somewhat longer setae ventrally; tarsus II, 16–8–6–4–4; tarsus III, 8–12–8–7–5.

Wing (Figure 170) narrowly oval, clear; veins brown. Vein 2 nearly straight; veins 3 and 4 essentially straight and parallel in distal 1/3; vein 4 scarcely bent at crossvein. Crossvein 3/4 as long as last of vein 5. Knob of halter yellow.

Abdomen appearing truncated; 5 narrow tergites visible, brown along middle of back, sides and sternites yellow. Hypopygium (Figure 171) brown, rather globose; basal shield with numerous setae; appendages pale, outer very small; inner appendages lamellate, oval, clear.

**FEMALE.**—Face narrow below but distinct to mouth; antennal segment 3 about as long as wide. Femora without longer setae below. Abdomen with black on tergites 1–5, tergites 6 and 7 and genitalia yellow.

**TYPE DATA.**—Holotype ♂ and 1 ♂ paratype from Dominica: Trafalgar Falls 15 Mar 1964 H. Robinson (USNM 72878). Allotype ♀, 1 ♂ and 1 ♀ paratypes from Dominica: Boeri Lake trail 22 Feb 1964 H. Robinson.

**REMARKS.**—The new species is like *Xanthina acuticornis*, new species, in the form of the antenna, but the former has three anterodorsals on the hind tibia, a fourth wing vein not (or scarcely)



bent at the crossvein, and hypopygial lamellae very short.

### Subfamily ENLINIINAE

#### Genus *Enlinia* Aldrich

Minute, metallic green to blackish with mostly dark setae. Face narrowed below with eyes approximated to contiguous above mouth in male, female face without setae. Palpus small. Pseudotracheae rudimentary, 12, with small irregular thickenings. Antenna with all segments usually short; segment 1 bare above; segment 2 truncate or slightly rounded apically, arista apical. Lower postocular setae uniseriate, small, dark.

Thorax with mesoscutum distinctly flattened posteriorly; acrostichals biseriate, small; dorso-centrals with anterior pairs not larger than acrostichals; scutellum with 2 bristles, a small hair on lateral margin. Femora without dorsal preapicals; male fore tarsus modified.

Wing with longitudinal veins in females and in most males rather straight and diverging from base, wings of some males with distorted margin and venation; crossvein usually shorter than last

part of vein 5; vein 6 represented by very slight fold. Calypter pale with dark margin and some dark setae.

Abdomen cylindrical, sometimes elongate, male sternites sometimes with auxillary genital structures. Hypopygium usually rather small, sessile to partly immersed.

REMARKS.—Members of the genus usually are overlooked because of their very small size and their habit of hovering or meandering flight close to the substrate. Species tend to have marked structural and ecological specializations, many of which are reviewed in the treatment of the Mexican species (Robinson, 1969). Some additional speculation on food habits are included here under *Enlinia patellitarsis*, new species. The following key includes the seven species presently known from the Lesser Antilles. Six species from Dominica, three from Jamaica, and three from Panama are described below.

Other known West Indian species of *Enlinia* are *E. tuberosa*, *E. spinimana*, *E. escambratica*, and *E. piedrana*, all described recently from limestone caves in Cuba by Botosaneanu and Vaillant (1973). To these I would add *Enlinia caburnica* (Botosaneanu and Vaillant), new combination,

### Key to the Species of *Enlinia* in the Lesser Antilles

1. Hind tibiae with many distinct dorsal bristles; wing veins 2, 3, and 4 all essentially straight throughout; hypopygium with felt of fine hairs on posterior surface ..... 2  
Hind tibiae with only a few indistinct dorsals; wings with at least vein 2 sinuous; hypopygium without distinct felt of fine hairs ..... 3
2. Middle tibia with 1 or 2 small anterodorsal bristles; lower pleural surface yellow; hind tarsus of male much distorted with crest of 5 stout setae on segment 3 ..... *E. dominicensis*  
Middle tibia with 2 large anterodorsal bristles; pleural surface almost entirely brown; hind tarsus of male scarcely distorted, a long, slender, apical seta posteriorly on segment 4 ..... *E. larondei*
3. Knob of halter yellow; middle tibia with large posterodorsal; male wing not modified and without long fringe on hind margin ..... *E. arborea*  
Knob of halter black or brown; middle tibia without prominent dorsals; male wing modified, fringed with long sinuous hairs on hind margin ..... 4
4. Male wing with large brown spot just before last part of vein 4 (Figure 91) ..... *E. sordida*  
Male wing without pigment spot ..... 5
5. Wing vein 2 equally far from costa and vein 3 in basal 1/2; male wing with distorted anterior margin near tip ..... *E. cataractarum*  
Wing vein 2 much closer to costa than vein 3 in basal 1/2; male wing with evenly curved anterior margin ..... 6
6. Segment 4 of male fore tarsus greatly enlarged, patellate; vein 3 of male wing ending far behind wing apex ..... *E. patellitarsis*  
Segment 4 of male fore tarsus not enlarged; vein 3 of male wing ending in or near wing apex ..... *E. bredini*

which was described in the same paper (1973:416) as *Harmstonia caburnica* but which has acrostichal setulae and an apical arista.

***Enlinia bredini*, new species**

FIGURES 92-98

**MALE.**—Length 1.0 mm; wing 1.0 mm by 0.4 mm. Face and front dark brownish; eyes contiguous below, anterior facets somewhat enlarged. Palpus and proboscis dark. Antenna black; segment 3 short, blunt; arista nearly 1.5 times as long as face.

Thorax dark brownish with greenish reflections, pleura brown; setae dark; 5 or 6 pairs of small acrostichals; 8-10 pairs of dorsocentrals; scutellum with hind margin evenly rounded, bristles widely separated, as near sides as middle.

Legs brown with yellow trochanters; setae mostly dark. Fore coxa (Figure 94) with 1 large bristle on inner anterior surface, a series of 4 or 5 fine upcurved hairs near apex anteriorly. Fore femur (Figure 94) rather thick toward base, with large anteroventral basally followed by series of 8 or 9 setae of which only distal 1 or 2 are as long as width of femur; femur II (Figure 95) thickened toward base, thickest part with 1st and longest of crowded ventral series of 6 stout bristles, all but 1st blunt; femur III rather arched, nearly bare below. Tibia I gradually slightly widened toward tip; tibia II (Figure 95) slightly flattened with numerous small erect setae ventrally near tip; tibia III with very small dorsals near base and tip. Tarsus I (Figure 94) modified, basitarsus gradually broadened toward tip, ventral margin overlapping segment 2 and bearing blunt-tipped seta; segment 2 projecting apron-like behind segment 3 with small notch in posterior lobe; large dorsal setae on segments 1 and 3; segment 4 borne behind tip of 3, flattened, discoid with very fine recurved hairs at base ventrally. Relative lengths of segments from base as tarsus I, 8-2-4-2-5; tarsus II, 9-4-4-3-4; tarsus III, 10-8-6-4-5.

Wing (Figure 96) oval with cuneate base, sinuous long-fringed hind margin, shallow sinus behind vein 5 opposite crossvein; clear. Vein 2 close to and parallel with costa, curving only slightly toward vein 3 in distal 1/2 before curving forward into costa; vein 3 straight, ending in

wing apex; vein 4 slightly sinuous beyond crossvein, curving slightly forward to join costa far behind tip of vein 3. Crossvein short, 2/3 as long as last of vein 5; last of vein 5 not reaching margin; vein 6 represented by indistinct thickening along anal margin. Knob of halter blackish.

Abdomen (Figure 92) about as long as thorax, cylindrical, brown with blackish pollen; setae dark; sternites 3 and 4 with minute setiferous papilla in middle of hind margin, hind corners of sternite 4 with complex, broad, brown projection (Figure 93) composed of a loop of twisted, finely striate chitin. Hypopygium small, brown; cerci very small with 1 rather long apical seta; apical lamella of armature pale, very broad with a slender seta on each side near base, the seta on lower angle bent, large prong or hook on inner surface on each side of base, a plumose hair at base of outer surface.

**FEMALE.**—Generally plain. Face about as wide below as antennal segment 1, anterior eye facets not much enlarged. Fore coxa, middle tibia, and fore tarus plain; fore and middle femora without distinctive ventral setae; lengths of segments of fore tarsus as 6-2-2-2-4. Wing (Figure 97) oval with gradually and evenly rounded hind margin, without long fringe; veins 2 and 3 essentially as in male; vein 4 nearly straight, slightly convex anteriorly in last part; vein 5 reaching margin; anal margin not thickened. Abdomen cylindrical, without sternal projections; genitalia as in Figure 98.

**TYPE DATA.**—Holotype ♂ from Dominica: Clarke Hall 29 Jan 1964 H. Robinson (USNM 72879). Allotype ♀ from Dominica: Clarke Hall 23 Jan 1964 H. Robinson. Paratypes from Dominica: 23 ♂ and 8 ♀ Clarke Hall 23 Jan-17 Apr 1964 H. Robinson; 1 ♂ and 1 ♀ Clarke Hall, Manets Gutter 5-7 Mar 1965, 1 ♀ Pont Casse 2.5 miles east, stream margin 16 Jan 1965, 1 ♂ and 4 ♀ Fond Figue River 23-25 Jan 1965, all W. W. Wirth.

**REMARKS.**—The new species is most distinct in the straight third vein of the modified male wing. Most of the specimens were collected from the more exposed wet surface of a cement cistern. This species along with the two following species form an interesting related series showing an ecological progression. This species occurs in the least wet habitats in the series.

*Enlinia patellitarsis*, new species

FIGURES 99-105

MALE.—Length 1.0 mm; wing 1.0 mm by 0.35 mm. Head and thorax essentially as in *E. bredini*, thorax with ca. 6 pairs of small acrostichals, 7 or 8 pairs of dorsocentrals.

Legs brown with yellow trochanters; setae mostly dark. Fore coxa (Figure 101) with 1 large bristle on inner anterior surface, a comb of 3 fine curved hairs near apex. Fore femur (Figure 101) rather thick toward base, large anteroventral basally followed by series of 9 setae of which more basal are progressively shorter; femur II (Figure 105) thickened toward base, with 2 strong stout setae at thickest part followed by 5 stout erect setae along posteroventral surface; femur III rather arched, nearly bare below. Tibia I gradually, slightly widened toward tip; tibia II slightly flattened with numerous small erect setae ventrally near tip; tibia III with very small dorsal seta near base and near tip. Fore tarsus (Figure 101) modified, basitarsus and segment 2 irregularly cylindrical, basitarsus with stout setae above and below, segment 3 with stout seta anteriorly at base, angle with slender seta in middle, a slender projection posteriorly adjacent to segment 2; segment 4 produced posteriorly into very large trilobed plate which bears small seta below near base. Relative lengths of segments of tarsi from base as tarsus I, 5-3-5-3-5; tarsus II, 10-5-4-3-3; tarsus III, 10-8-6-5-5.

Wing (Figure 99) oval with cuneate base and sinuous, long-fringed hind margin, shallow sinus between ends of veins 4 and 5; clear. Vein 2 very close to costa in basal 1/2, curving far inward from costa in distal 1/2, nearly straight at tip which is well before wing apex; vein 3 curving strongly backward, ending far behind wing apex; vein 4 slightly sinuous, not bent at crossvein, curving slightly backward in middle of last part just behind patch of long, backward-directed, minute setae, vein curving slightly forward near tip and ending twice as far behind wing apex as vein 3. Crossvein short, 1/2 as long as last of vein 5; vein 5 ending just short of wing margin; vein 6 represented by indistinct thickening along anal margin. Knob of halter blackish.

Abdomen slightly longer than thorax, cylindri-

cal, brown with blackish pollen, sternites paler brown; setae dark; sternite 3 with peglike projections near middle of base and on middle of hind margin, latter more truncate, similar but anteriorly curving projection on hind margin of sternite 4. Hypopygium (Figure 103) small, brown; cerci very small with apical crest of 4 or 5 short setae; apical lamella of armature (Figure 104) pale with apical bent blunt-tipped seta, external plumose hair, and prominent interior hook.

FEMALE.—Generally plain. Face about as wide below as antennal segment 1, anterior eye facets not much enlarged. Fore coxa, middle tibia, and fore tarsus plain; fore and middle femora without distinctive ventral setae; lengths of segments of fore tarsus as 7-2-2-2-3. Wing (Figure 100) oval with gradually and evenly rounded hind margin, without long fringe; vein 2 very close to costa at base as in male, not ending as near wing apex; vein 3 straight, ending in wing apex; vein 4 nearly straight, diverging from vein 3; anal margin of wing not thickened. Abdomen cylindrical, without sternal projections; genitalia as in Figure 102.

TYPE DATA.—Holotype ♂ and 5 ♂ paratypes from Dominica: Freshwater Lake 23 Feb 1964 H. Robinson (USNM 72880). Allotype ♀, 3 ♂ and 2 ♀ paratypes from Dominica: Clarke Hall 29 Jan 1964 H. Robinson. Additional paratypes from Dominica: 13 ♂ and 1 ♀ 23 Jan-20 Feb, 1 ♀ 17 Apr 1964 H. Robinson, 1 ♂ and 2 ♀ 18 Jan 1965 cocoa trail, 1 ♀ 11-20 Feb 1965 W. W. Wirth, all Clarke Hall; 2 ♂ and 1 ♀ Clarke Hall, Manets Gutter 5-7 Mar 1965 W. W. Wirth; 1 ♀ 28 Jan, 5 ♂ and 4 ♀ 14 Feb 1964 near North Deux Dleau River, H. Robinson; 3 ♂ near Sylvania 10 Feb 1964, 1 ♀ La Ronde River 15 Feb 1964 H. Robinson; 2 ♂ and 1 ♀ 21 Feb 1964 H. Robinson, 1 ♂ 23 Mar 1964 D. F. Bray, all Freshwater Lake; 1 ♂ Hodges River 4 Mar, 1 ♂ Trafalgar Falls 15 Mar 1964 H. Robinson; 1 ♂ and 2 ♀ Pont Casse 2.5 miles east, stream margin 16 Jan 1965 W. W. Wirth; 1 ♂ and 1 ♀ 23-30 Jan, 1 ♂ and 2 ♀ rain forest 9 Feb, 1 ♂ light trap 13 Mar 1965 W. W. Wirth, all Fond Figues River; 1 ♂ and 1 ♀ Dleau Gommier 15 Feb 1965 W. W. Wirth.

REMARKS.—The new species is most easily distinguished by the backward-curving veins of the male wing and by the large, platelike fourth segment of the male fore tarsus. The platelike part

of the fourth segment is wrapped around the basal part in the living specimens. Most of the specimens were obtained on wet rock surfaces that were constantly splashed by water. Some of the specimens were from the same cement cistern as the specimens of *E. bredini* but always from the wetter part. The species was not found in the extremely wet habitats frequented by *E. cataractarum*. The actual type of rock on which the species was found varied.

Some female specimens mounted on slides show diatoms in the hind gut. It is not known when the diatoms got into the system or whether they were from a primary or secondary source. Still, it might well be questioned what the source of food would be for Dolichopodidae the size of *Enlinia* if they were predaceous. It seems likely that the genus would be phytophagous in at least the larval stage, as is apparently the case in the genus *Thrypticus*.

### *Enlinia cataractarum*, new species

FIGURES 106-113

MALE.—Length 1.2 mm; wing 1.1 mm by 0.4 mm. Face and front brownish; eyes contiguous below, anterior facets somewhat enlarged. Palpus and proboscis dark. Antenna black; segment 3 short and blunt, arista nearly 1.5 times as long as face.

Thorax dark brownish with green reflections, pleura brown; setae dark; 7 or 8 pairs of small acrostichals; 7 or 8 pairs of dorsocentrals; scutellum hind margin evenly rounded, bristles as near sides as middle.

Legs brown with yellow trochanters; setae mostly dark. Fore coxa (Figure 109) with 1 large bristle on inner anterior surface, a series of 3 or 4 long, strongly recurving setae distally. Fore femur (Figure 109) rather thick toward base, with erect anteroventral basally followed by series of 8 or 9 which are very short, a few longer posteroventrals distally; femur II (Figure 108) thickened toward base, with 1 strong stout pointed seta at thickest part followed by 3 or 4 stout erect blunt setae along basal 1/2 of posteroventral surface; femur III rather arched, nearly bare below. Tibia I (Figure 109) gradually and slightly widened toward tip; tibia II slightly flattened with numer-

ous small erect setae ventrally at tip; tibia III with a small dorsal seta near base and 1 near tip, a small indistinct anterodorsal near 1/3. Fore tarsus (Figure 109) modified, basitarsus with long slender dorsal seta, posterior surface with numerous long hairs, projecting posteroventral margin with stout blunt seta; segment 2 divided into anterior and posterior lobes, posterior lobe subdivided with a large apical lobe and small lobes on outer anterior margin; segment 3 (Figure 110) with long lobe below, long seta anteroventrally, specialized thick apiculate seta on outer surface; segment 4 with long seta dorsally, very densely pubescent lobe ventrally; segment 5 rather long with long hairs above near tip. Relative lengths of segments of tarsus II, 11-5-4-3-5; tarsus III, 12-11-8-7-6.

Wing (Figure 111) rather elliptical with very sinuous margins and cuneate base, shallow sinus anteriorly between tip of vein 2 and wing apex, sinus posteriorly behind tip of vein 4 and sinus behind crossvein; hind margin fringed with long hairs; wing clear. Vein 2 nearly straight, not close to costa in basal part; vein 3 curving only slightly backward near tip, ending in wing apex; vein 4 arched slightly forward in last part, curving forward into costa at tip, ending far behind wing apex. Crossvein very short, 1/2 as long as last of vein 5; vein 5 lying close to vein 4 and rather thickened, ending short of hind margin; vein 6 represented by indistinct thickening along anal margin. Knob of halter black.

Abdomen (Figure 107) slightly longer than thorax, cylindrical, brown with blackish pollen; sternite 3 with erect prominent projection from center, sternite 4 with small setiferous projection from near middle of hind margin, projections on each side of sternite 4 bearing pairs of long, faintly striate rods (Figure 106). Hypopygium small, brown; cerci very small with 2 or 3 rather long apical setae; apical lamella of armature pale, very long and broad with a slender seta on each side near middle, lower edge distinctly bent, upper edge with large lobe near base bearing points and stout seta.

FEMALE.—Generally plain. Face about as wide below as antennal segment I, anterior eye facets not much enlarged. Fore coxa, middle tibia, and fore tarsus plain; fore and middle femora without distinctive ventral setae; lengths of segments of

fore tarsus as 6-2-2-2-4. Wing (Figure 112) oval, with gradually and evenly rounded fore and hind margins, without long fringe; vein 2 slightly arched with slight forward curve at tip, not close to costa near base; vein 3 nearly straight, ending at wing apex; vein 4 scarcely arched in last part, ending nearer tip of vein 3 than tip of vein 5; vein 5 reaching hind margin; anal margin not thickened. Abdomen without sternal projections; genitalia as in Figure 113.

**TYPE DATA.**—Holotype ♂, allotype ♀, 3 ♂ and 29 ♀ paratypes from Dominica: Deux Branches, Pagua River 2-3 Feb 1964 H. Robinson (USNM 72881). Additional paratypes from Dominica: 1 ♂ near North Deux Dleau River 14 Feb, 3 ♀ La Ronde River 15 Feb, 7 ♂ and 1 ♀ Clarke Hall 19-20 Feb, 1 ♀ Freshwater Lake 23 Feb, all 1964, H. Robinson; 1 ♂ 16 Mar 1964 H. Robinson, 1 ♀ 23 Jan, 1 ♂ and 1 ♀ rain forest 9 Feb, 1 ♂ light trap 13 Mar 1965 W. W. Wirth, all Fond Figue River; 1 ♀ Dleau Gommier 15 Feb 1965 W. W. Wirth.

**REMARKS.**—The most distinctive feature of the new species is the wing with the distorted front and hind margins. The species is found hovering by surfaces constantly washed by surging water in the rapids of a river; and it seems to stay mostly within one or two inches of the water surface though the surface fluctuates rapidly. It is not known how much the insects actively avoid the spray and surface or how much they are helped by air currents. Only occasional specimens were collected farther from the water.

### *Enlinia arborea*, new species

FIGURES 114-118

**MALE.**—Length 1.0 mm; wing 1.0 mm by 0.4 mm. Face and front dark brown; eyes essentially contiguous below, anterior facets somewhat enlarged. Palpus and proboscis dark. Antenna black; segment 3 short and blunt, arista nearly 1.5 times as long as face.

Thorax blackish with brownish pleura and yellowish scutellum; setae brownish with pale reflections; 6 pairs of small acrostichals; 7 or 8 pairs of dorsocentrals; scutellum hind margin evenly rounded, bristles as near sides as middle.

Legs having coxae (except bases), trochanters,

knees, tips of tibiae and most of tarsi yellow; femora and tibiae (except bases and tips), and 5th segments of fore and hind tarsi pale brownish. Fore coxa plain. Fore and middle femora with only a small erect seta ventrally near base; femur III rather arched below with only small oblique setae. Fore and hind tibiae gradually and slightly widened toward tip; middle tibia widest just before middle, very long posterodorsal and short anterodorsal at 1/2; tibia III with small dorsals near base, at 2/5, and tip. Tarsi I (Figure 115) modified, basitarsus rather plain, segment 2 compressed and broad with angular hind margin, segment 3 with erect blunt stout seta directed posteriorly from base of hind margin, a stout sharp anterodorsal at tip. Relative lengths of tarsal segments from base as tarsus I, 9-3-2-3-5; tarsus II, 9-5-5-3-5; tarsus III, 8-11-6-5-6.

Wing (Figure 114) rather oblong-oval, margins evenly rounded without long fringes; colorless. Vein 2 slightly arched and not close to costa except where turning forward at tip; vein 3 very slightly arching in distal 2/3 and ending just before wing apex; last part of vein 4 arched as vein 3 and slightly diverging from it, ending well behind wing apex. Crossvein slightly but distinctly shorter than last of vein 5; vein 6 represented by slight fold. Knob of halter yellowish.

Abdomen slightly shorter than thorax, slightly flattened, brown with blackish pollen; sternite 3 (Figure 117) with strongly sclerotized, longitudinal central rod of which the posterior 2/5 projects outward from surface, tip slightly broadened and truncate, sternal surface on each side with sclerotized setiferous island bearing strong appressed spine at outer anterior corner; sternite 4 with pair of otherwise unspecialized, sclerotized setiferous areas. Hypopygium (Figure 116) small, brown, cerci broad and triangular, covered with short setae, a few long apical setae; armatures slender with only minute setae.

**FEMALE.**—Similar to male. Face about as wide below as antennal segment 1, anterior eye facets not much enlarged. Femora without erect setae ventrally; fore tarsus plain, lengths of segments as 8-3-3-3-4. Wing as in male. Abdomen cylindrical without specialized sclerotized areas ventrally; genitalia as in Figure 118.

**TYPE DATA.**—Holotype ♂ from Dominica: Clarke Hall 5 Feb 1964 H. Robinson (USNM



72882). Allotype ♀ from Dominica: Clarke Hall 23 Jan 1964 H. Robinson. Paratypes from Dominica: 12 ♂ and 7 ♀ Clarke Hall 23 Jan–6 Mar 1964 H. Robinson; 3 ♂ Hodges River 4–6 Mar 1964 H. Robinson; 1 ♂ 23 Jan, 1 ♀ light trap 13 Mar 1965, both Fond Figues River, W. W. Wirth; 1 ♂ Woodford Hill, swamp forest 27 Feb 1965 W. W. Wirth.

REMARKS.—The new species is rather plain but the stout truncate projection on the third abdominal sternite of the male is distinctive. The yellow halteres also are rather unusual in the genus. Most of the specimens were taken on the drier portions of a cement cistern on the Clarke Hall Estate. Other specimens were collected with difficulty from the rough surfaces of tree trunks. The latter habitat is presumed to be the natural one.

***Enlinia dominicensis*, new species**

FIGURES 119–124

MALE.—Length 1.4 mm; wing 1.4 mm by 0.5 mm. Face and front dark, dulled with brown pollen; eyes essentially contiguous below, anterior facets somewhat enlarged. Palpus and proboscis dark. Antenna black; segment 3 short and blunt, arista nearly twice as long as face.

Thorax dark, dulled with brown pollen above, scutellum often more reddish, upper pleura brown, lower pleura yellowish; setae dark; ca. 6 pairs of small acrostichals preceded by 4–6 additional minute pairs; 6 distinct pairs of dorsocentrals; scutellum hind margin evenly rounded, bristles slightly nearer middle than sides; scutellar bristles and posterior dorsocentrals very long.

Legs including coxae mostly pale, hind tibia and tarsus, upper margin of hind femur, and 5th segments of fore and middle tarsi brownish. Fore coxa (Figure 119) elongate with long, rather sinuous setae distally along inner anterior surface. Fore femur (Figure 119) with 1–3 slender, erect, curved anteroventral setae near base followed by series of ca. 7 or 8 small, less erect setae; middle and hind femora with a few longer posteroventrals near tip, lower margin of hind femur straight. Tibia I with 1 or more scarcely distinct anterodorsals near basal 1/3 or beyond; tibia II with large posterodorsal near basal 1/3, small anterodorsal near 1/3 and sometimes 2/3, 1 distinct

apical ventrally; tibia III with 2 large anterodorsals, 5 large posterodorsals, 2 or 3 small apicals. All tarsi with scattered long slender recurved hairs below; tarsus I (Figure 120) modified, basitarsus plain, segment 2 slightly widened distally, segment 3 with erect stout blunt seta posteroventrally at base, distal segments with longer apical hairs above; tarsus III with segments 1 and 2 bearing long slender apical seta dorsally, segment 3 (Figure 121) slightly swollen distally with a mat of numerous erect setae on ventral surface, a comb of 5 long stout setae anterodorsally, segment 4 only slightly swollen with very few short crowded setae below, hind tarsus distinctly twisted in dried specimens with segment 3 turning inward and segments 4 and 5 turning more downward. Relative lengths of tarsal segments from base as tarsus I, 15–6–6–5–6; tarsus II, 14–9–7–5–6; tarsus III, 13–15–8–5–6.

Wing (Figure 124) oval with evenly rounded hind margin, with only short fringe; clear. Veins 2, 3, and 4 essentially straight and diverging to tips; vein 3 ending slightly but distinctly before wing apex; vein 4 ending well behind wing apex. Crossvein slightly shorter than last of vein 5; vein 6 represented by long fold inside anal margin. Knob of halter brown.

Abdomen slightly longer than thorax, cylindrical, brown with blackish pollen; tergites reddish tinged, sternites without ornamentation. Hypopygium (Figure 122) small, brown, covered posteriorly by felt of fine, apically hooked hairs; cerci triangular, densely pubescent, brownish; armatures long and slender with a large curved seta from middle of outer edge.

FEMALE.—Similar to male. Face about as wide below as antennal segment I, anterior eye facets not much enlarged. Femur without erect setae ventrally; segments of tarsi plain, lengths as tarsus I, 14–5–4–4–5; tarsus III, 14–16–12–7–7. Wing as in male. Genitalia as in Figure 123.

TYPE DATA.—Holotype ♂, allotype ♀, 6 ♂ and 13 ♀ paratypes from Dominica: Deux Branches, Pagua River 2–3 Feb 1964 H. Robinson (USNM 72883). Additional paratypes from Dominica: 2 ♂ and 23 ♀ Springfield Estate 1 Feb, 1 ♀ Batali River 2 Feb, 1 ♀ near North Deux Dleau River 14 Feb, 1 ♂ and 1 ♀ La Ronde River 15 Feb, 1 ♀ Clarke Hall 20 Feb, 2 ♀ Dleau Morne Laurent 1 Mar, 1 ♀ Trafalgar Falls 15 Mar, 8 ♂ and 2 ♀

Fond Figs River 16 Mar 1964, all H. Robinson.

REMARKS.—This new species and the following one form a group distinguished by the large dorsal setae on the hind tibiae and the felt of hairs on the posterior surface of the hypopygium. The wings and hind tibiae of the two species are reminiscent of the *Enlinia armata* group of Mexico, but the new species lack the distinctive ventral setae of the fore femora characteristic of the Mexican group. The new species were collected from moist rock surfaces around rather quiet streams and pools. The habitats were usually more shaded.

One very well preserved female shows the eyes nearly meeting below the clypeus. The condition seems to be natural for this and most other species of *Enlinia* but usually is not evident because of head distortion.

*Enlinia larondei*, new species

MALE.—Length 1.3 mm; wing 1.4 mm by 0.5 mm. Face and front dark metallic green or bronze; eyes essentially contiguous below, anterior facets somewhat enlarged. Palpus and proboscis dark. Antenna black; segment 3 short and blunt, arista nearly twice as long as face.

Thorax dark metallic green above, pleura brown; setae dark; 5 or 6 pairs of small acrostichals preceded by 2 or 3 additional minute pairs; 6 distinct pairs of dorsocentrals; scutellum hind margin evenly rounded, bristles slightly nearer middle than sides; scutellar bristles and hind dorsocentrals very long.

Legs including coxae mostly pale, 5th segments of tarsi I and II and tarsus III from middle of basitarsus brownish. Fore coxa with numerous dark, not particularly long setae distally on anterior surface. Femur I with slender straight erect anteroventral seta near base followed by series of ca. 17 similar progressively smaller setae; femora II and III with a few longer posteroventrals near tip, lower margin of femur III straight. Tibia I with 5 rather distinct anterodorsals along distal 2/3; tibia II with large posterodorsal near 1/3, large anterodorsals near 1/3 and 2/3, usually 2 distinct apicals anteriorly and ventrally; tibia III with 2 large anterodorsals, 5 large posterodorsals, 2 or 3 small apicals. Fore tarsus scarcely modified,

basitarsus plain, segment 2 slightly widened distally, segment 3 with erect stout blunt seta posteroventrally at base, last 3 segments of longer apical hairs dorsally; tarsus III scarcely modified or twisted, segment 4 with long slender apical seta posterodorsally. Relative lengths of tarsal segments from base as tarsus I, 15-6-5-3-5; tarsus II, 15-11-7-5-6; tarsus III, 11-15-9-6-5.

Wing oval with evenly rounded hind margin, with only short fringe; clear. Veins 2, 3, and 4 essentially straight and diverging to tips; vein 3 ending slightly but distinctly before wing apex; vein 4 ending well behind wing apex. Crossvein slightly but distinctly shorter than last of vein 5; vein 6 represented by long fold inside anal margin. Knob of halter brown.

Abdomen slightly longer than thorax, cylindrical or slightly compressed, brown with reddish tinges and blackish pollen; tergite 1 more metallic green with grayish pollen; sternites slightly paler brown, without ornamentation. Hypopygium small, brown, covered posteriorly by felt of fine, apically hooked hairs; appendages not seen.

FEMALE.—Generally similar to male. Face about as wide below as antennal segment 1, anterior eye facets not much enlarged. Femora without erect setae ventrally; fore tibia with anterodorsals less distinct; segments of tarsi plain; lengths of segments of fore tarsus as 9-3-3-3-6. Wing as in male.

TYPE DATA.—Holotype ♂ from Dominica: Clarke Hall, light trap 21-31 Jan 1965 W. W. Wirth (USNM 72884). Allotype ♀, 6 ♂ and 8 ♀ paratypes from Dominica: La Ronde River 15 Feb 1964 H. Robinson. Additional paratypes from Dominica: 1 ♀ Fond Figs River, light trap 13 Mar 1965 W. W. Wirth.

REMARKS.—The new species is very closely related to *Enlinia dominicensis*, new species, but differs in the structure of the male hind tarsus and in the dorsal setae of the middle tibiae. The species also differs somewhat in color, especially on the pleural surface. The species was taken mostly along the La Ronde River near the La Ronde family home at La Plaine. The species seems to be nearly restricted on the island to the area on the east coast where it displaces its close relative *E. dominicensis*. The habitat preferences of the two new species seem similar.

*Enlinia jamaicensis*, new species

FIGURES 125-128

MALE.—Length 0.9 mm; wing 1.1 mm by 0.4 mm. Eyes contiguous below, anterior facets somewhat enlarged; front dark metallic green with black pollen. Palpus and proboscis black, former without prominent setae. Antenna black; segment 3 short and blunt, arista ca. 1.25 times as long as facial area.

Thorax metallic dark green, shining above, more blackish on pleura; setae black; 8 pairs of acrostichals; 8 pairs of dorsocentrals, only last 2 pairs larger; scutellum hind margin evenly rounded, bristles as near sides as middle.

Legs brown with segments 1 and 2 of tarsi whitish. Fore and middle coxae with short, dark setae anteriorly. Femur II (Figure 126) with 4 or 5 rather long, erect bristles ventrally near base at widest part of femur. Tibia II with only slightly more distinct hairs ventrally near tip; tibia III with 2 small hairlike dorsals near base and near tip. Fore tarsus (Figure 125) with basitarsus slightly compressed, segment 2 very compressed, widest at middle below, oblique anterior part of apex bearing segment 3. Relative lengths of tarsal segments from base as tarsus I, 3-2-2-1-2; tarsus II, 5-2-2-1-2; tarsus III, 6-5-3-3-3.

Wing (Figure 128) broadly oval with rather evenly rounded hind margin, clear; veins brown. Vein 2 diverging from costa in median portion, becoming nearly twice as far from costa as near base, curving slightly but distinctly forward at tip; vein 3 straight, ending distinctly before wing apex; last part of vein 4 curving very slightly backward, ending far behind wing apex. Crossvein ca 1/2 as long as last of vein 5; vein 6 represented by slight fold well inside anal margin. Knob of halter black.

Abdomen shining blackish green; sternite 3 with slender erect projection from middle of hind margin; sternite 4 with slender forked appendage in middle. Hypopygium (Figure 127) small, partly enclosed in tip of preabdomen; cerci small, triangular, pale brown with short pale pubescence; armatures prolonged into narrow tonglike tips, with a slender seta borne outside near base.

FEMALE.—Face less than 1/2 as wide as antennal segment 1, anterior facets of eyes not enlarged. Femora without distinctive ventral setae; fore

tarsus plain, lengths of segments as 3-1-1-1-2; tarsus II, 4-3-2-1-2; tarsus III, 5-4-3-2-3.

TYPE DATA.—Holotype ♂, allotype ♀, 2 ♂ and 2 ♀ paratypes from Jamaica: Falmouth, bay shore, 1 Mar 1969 W. W. Wirth (USNM 72885). Paratypes: 4 ♀ from Jamaica: Runaway Bay 16-28 Feb 1969 W. W. Wirth.

REMARKS.—The new species is related to the widespread *Enlinia ciliata* H. Robinson of the eastern United States and Mexico. It has the narrow female face, metallic green abdomen, cilium on the hypopygial armature, and whitish basal segments of the tarsi as in *E. ciliata*. Supposedly the new species would have frequented moist sand or soil substrates like other members of the *E. ciliata* group. The species is distinct by the more enlarged second segment of the male fore tarsus and by the longer, narrower armature of the hypopygium.

*Enlinia crassipes*, new species

FIGURES 129-133

MALE.—Length 1.0 mm; wing 1.1 mm by 0.4 mm. Eyes essentially contiguous below, anterior facets somewhat enlarged; facial triangle and front black with black pollen, with very slight blue reflections. Palpus and proboscis black, former without prominent setae. Antenna black; segment 3 short, blunt, arista ca. 1.5 times as long as facial area.

Thorax with mesoscutum dark metallic bluish green, scutellum and pleura more brownish black with slight grayish brown pollen; setae black; 8 pairs of small acrostichals; 8 or 9 pairs of dorsocentrals, only last 2 pairs larger; scutellum hind margin evenly rounded, bristles as near sides as middle.

Legs mostly black with trochanters and basitarsi whitish, 2nd segments of tarsi yellowish brown. Fore and middle coxae with only short, rather pale setae anteriorly. Femur I (Figure 129) with long ventral seta near base at widest part, a series of short setae posteroventrally; femur II (Figure 130) with 3 rather long erect setae near base at widest part of femur. Tibia II with anterior edge slightly flanged to near tip and bearing a series of short, close-set, rather erect setae; tibia III with 2 small hairlike dorsals near base and

near tip. Fore tarsus (Figure 129) with segments 1 and 2 compressed, basitarsus widest at tip, 2 narrowed from wide base; tarsus III (Figure 131) with segments 2-4 distinctly thickened. Relative lengths of tarsal segments from base as tarsus I, 3-2-2-2-3; tarsus II, 5-5-3-2-2; tarsus III, 4-7-3-3-2.

Wing (Figure 132) broadly oval with evenly rounded hind margin, clear with brown veins. Vein 2 not diverging notably from costa, remaining nearly straight at tip; vein 3 curving gradually backward, ending distinctly before wing apex; last part of vein 4 curving gradually backward, ending twice as far behind wing apex. Crossvein ca.  $1/2$  as long as last of vein 5; vein 6 represented by only slight fold near anal margin. Knob of halter yellow.

Abdomen shining blackish; sternite 2 with a short erect seta and a few very small hairs in middle of surface; sternite 3 with slender erect projection from middle of hind margin. Hypopygium (Figure 133) small, dark brown, cylindrical, directed downward and scarcely reaching below level of sternites; cerci very long and narrow with series of long setae at tip, a series of long setae from near base of upper edge that lie close to upper edge and run under tip of lamella, lower margin with an outwardly directed seta from inner edge followed by rodlike moniliform projection bearing pairs of short slender hairs on segments; inner appendages small, triangular, clear.

**FEMALE.**—Face about as wide below as antennal segments; anterior facets of eyes not enlarged. Fore and middle basitarsi brownish; femora without distinctive ventral setae; tibia II plain; fore tarsus plain; tarsus III with only short basitarsus thickened; lengths of tarsal segments as tarsus I, 4-1-1-1-2; tarsus II, 4-3-2-2-3; tarsus III, 5-6-4-3-3. Wing vein 4 not curving quite as much backward in last part.

**TYPE DATA.**—Holotype ♂, 3 ♂ paratypes from Jamaica: Runaway Bay, stream bed, Feb 1969 W. W. Wirth (USNM 72886). Allotype ♀ and 1 ♂ paratype from Jamaica: Hardwar Gap, stream margin, 10 Mar 1970 Wirth and Farr.

**REMARKS.**—*Enlinia crassipes* is most distinct in the combination of long hypopygial lamellae, white basitarsi, a slender projection from the middle of the hind margin of the third sternite

of the male, and rather wide female face. The closest relationship is not entirely clear. All three Jamaican species have a slender projection from the hind margin of the third abdominal sternite and all the species also show some white basal segments on the tarsi. This might suggest the species are all closely related, but *E. jamaicensis*, new species, is definitely a member of the well-defined *E. ciliata* group with three previously known species in Mexico and the eastern United States. The remaining two Jamaican species, *E. crassipes* and *E. farri*, are definitely not members of this group; they lack the narrow female face, lack metallic green on the abdomen, and lack the forked projection on the fourth abdominal sternite. The latter two species, with their sternal projection, fall into what I have called the *E. hirtipes* group in Mexico. Still, *E. crassipes* does have the whitish basal segments of the tarsi, 2 or 3 stronger setae on the base of the middle femur, and slightly more numerous dorsocentrals—characters that are associated elsewhere with the *E. ciliata* rather than the *E. hirtipes* group.

### *Enlinia farri*, new species

FIGURES 134-137

**MALE.**—Length 0.9 mm; wing 1.0 mm by 0.4 mm. Eyes contiguous below, anterior facets enlarged; front black with slight blue or violet reflections dulled by dark brownish pollen. Palpus black without prominent setae; proboscis small, yellowish brown. Antenna black; segment 3 short, blunt, arista ca. twice as long as facial area.

Thorax with mesoscutum black with blue reflections and slight brown pollen, pleura dark brown with very slight gray pollen; setae black; 7 or 8 pairs of small acrostichals; 8 pairs of slightly larger dorsocentrals; scutellum dark brown, hind margin evenly rounded, bristles as near sides as middle.

Legs mostly brownish with trochanters and tips of coxae pale. Fore and middle coxae with only short setae anteriorly, those near tip dark. Femur II (Figure 135) with 2 rather long, erect setae ventrally near base; tibia II with stout, more erect hairs ventrally toward tip; tibia III with very small dorsals near  $1/6$ ,  $1/3$ , and near tip, a small apical below. Fore tarsus (Figure 134) with basitarsus enlarged toward tip, segment 2 small with

short slender seta near tip, segment 3 forming a half coil and bearing small segment 4 near tip, segment 5 elongate and becoming slender at base. Relative lengths of tarsal segments from base as tarsus I, 3-2-2-1-3; tarsus II, 4-3-3-2-3; tarsus III, 4-5-4-3-3.

Wing (Figure 137) oval with evenly rounded, short-fringed hind margin, clear with brownish veins. Vein 2 twice as far from costa near tip as at base, curving gradually forward at tip; vein 3 curving slightly backward, ending just before wing apex; last part of vein 4 curving slightly backward, diverging gradually from vein 3, ending well behind wing apex. Crossvein nearly  $1/2$  as long as last of vein 5; vein 6 represented by slight fold close to anal margin. Knob of halter black.

Abdomen about as long as thorax, cylindrical, dark brown with black pollen above; sternite 3 with slender erect projection from middle of hind margin. Hypopygium (Figure 136) small, capping tip of preabdomen, brown; lamella broadly clavate with many long dark setae on each margin and along tip, the setae on posterior margin longest and arching up to near top of abdomen.

**FEMALE.**—Face about as wide below as antennal segments; anterior facets of eyes not much enlarged; palpus small, brown with distinct short apical setae. Femora without distinctive ventral setae; tibia II plain; tarsus I plain, hind tarsus with basal 2 segments yellow; relative lengths of tarsal segments as tarsus I, 5-2-2-1-3; tarsus II, 5-3-2-2-3; tarsus III, 5-5-4-3-4.

**TYPE DATA.**—Holotype ♂ and allotype ♀ from Jamaica: Hardwar Gap, stream margin, 10 Mar 1970 Wirth and Farr (USNM 72887). The allotype specimen was damaged with head and hind tarsi lost after description.

**REMARKS.**—The new species has characters of the *Enlinia hirtipes* group and is similar in basic features to the preceding species, *E. crassipes*, and to the following Panamanian species, *E. crassitibia*. From both of these *E. farri* is distinct by the unexpanded middle tibia and the half-coiled third segment of the fore tarsus in the male. *Enlinia farri* is distinct from all species by the broad-tipped hypopygial lamellae bearing a very prominent fringe of long setae.

It seems unusual that the basal segments of the female hind tarsus should be pale when those of the male are not. There is a slight possibility that

the female represents a separate but closely related species.

### *Enlinia crassitibia*, new species

FIGURES 138-143

**MALE.**—Length 0.9 mm; wing 1.0 mm by 0.35 mm. Face and front dark blackish green; eyes essentially contiguous below, anterior facets much enlarged, Palpus recessed, only the very prominent numerous stiff black apical setae visible; proboscis small, brownish yellow. Antenna black; segment 3 short and blunt, arista 1.5 times as long as face.

Thorax dark blackish green with blackish pollen, pleura more brown, lowest pleura yellowish; setae black; 5 or 6 pairs of small acrostichals; 7 distinct pairs of dorsocentrals; scutellum hind margin more sharply rounded in middle, bristles as near sides as middle.

Legs including coxae pale, pale brownish on tarsi and most of hind leg. Fore coxa (Figure 139) with 1 long, apically curved, pale seta anteriorly, shorter, slightly darker setae apically. Fore femur (Figure 139) with row of 6 or 7 long white setae along anterior surface, shorter erect setae along anteroventral surface, 7 or 8 long erect setae along distal  $2/3$  of posteroventral surface, 1st of last series shorter and more curved and often dark; femur II (Figure 141) with 8 or 9 long erect dark setae anteroventrally, last 2 particularly long and black, 10-12 long, erect or slightly retrorse setae posteroventrally, shorter erect black seta near middle of posterior surface; femur III plain. Tibiae I and III plain with only indistinct dorsal setae; tibia II (Figures 141, 142) broad and rather flat, stout, short setae at base anteriorly and dorsally, many short, rather erect setae in series along swollen anterior surface, 7 or 9 long setae along posterodorsal surface with basal ones directed erratically, 3 or 4 stout hooked black setae ventrally. Fore tarsus (Figure 139) with segments 1-3 slightly modified, segment 2 with rather long seta above, segment 3 with short dark erect spicule; tarsus II with basitarsus scarcely enlarged at base with minute ventral; tarsus III (Figure 140) with segments 1-3 broadened with produced posterior margins bearing rather prominent fringe of short hairs. Relative lengths of tarsal segments from base



as tarsus I, 6-3-3-3-5; tarsus II, 9-3-3-3-4; tarsus III, 10-5-4-3-6.

Wing (Figure 138) elliptical with evenly rounded, rather short-fringed hind margin, clear. Vein 2 slightly arching and slightly curved forward at tip, only 6 or 7 microhair rows from costa at widest; vein 3 essentially straight, ending just before wing apex; vein 4 nearly straight, ending far behind wing apex. Crossvein ca.  $1/2$  as long as last of vein 5; vein 6 represented by short slight fold near anal margin. Knob of halter black.

Abdomen usually slightly shorter than thorax, dark brown with black pollen above; sternite 3 with slender erect projection from middle of hind margin. Hypopygium (Figure 143) small, capping tip of preabdomen, brown; lamellae small, rounded, and pale brownish with long marginal setae, 1 very long black seta on each lamella; inner appendages long, hyaline, and bladeliike, in resting position extending forward to projection on sternite 3.

FEMALE.—Face about as wide below as antennal segment 1, anterior eye facets not much enlarged; palpus small, brown, without prominent long setae. Fore coxa and femora without long setae; tibia II plain, slender; tarsi plain, relative lengths of segments as tarsus I, 5-2-2-2-3; tarsus II, 6-4-4-3-5; tarsus III, 8-7-5-4-4.

TYPE DATA.—Holotype ♂, 1 ♀ paratype from Panama Canal Zone: Barro Colorado Island, malaise trap, July 1967 W. W. Wirth (USNM 72888). Allotype ♀, 1 ♂ paratype from Panama Canal Zone: Gamboa July 1967 W. W. Wirth; 1 ♂ Republic of Panama: Cerro Campana July 1967 W. W. Wirth.

REMARKS.—The new species belongs in the group with and is closely related to *Enlinia hirtipes* H. Robinson of Mexico. The new species differs in many details but most prominently by the greatly enlarged middle tibia and by the longer setae on the hypopygial lamella. The long setae of the male palpus also are very distinctive, but the palpal setae of *E. hirtipes* prove to be more prominent than those of most members of the genus.

### *Enlinia wirthi*, new species

FIGURES 144-147

MALE.—Length 0.9 mm; wing 1.0 mm by 0.4

mm. Face and front reddish green covered with black pollen; eyes essentially contiguous below, anterior facets somewhat enlarged. Palpus small, brown without prominent hair; proboscis small, light brown. Antenna black; segment 3 short and blunt, arista only slightly longer than face.

Thorax metallic blackish green or blue with black pollen; setae brown with rather pale reflections; 6 or 7 pairs of small acrostichals; 7 pairs of small dorsocentrals; scutellum hind margin evenly rounded, bristles as near sides as middle.

Legs mostly brown with fore and middle trochanters and bases of adjacent femora pale. Fore coxa plain. All femora rather slender with a long slender erect ventral seta near base, hind femur as in Figure 147. Tibia I gradually, slightly broader toward tip, with long, slender ventral seta at apex; tibia II plain, with small anterodorsal near  $1/3$ ; tibia III with a small dorsal near  $1/3$  and near tip. Tarsus I (Figure 146) scarcely modified, segments 1 and 2 rather flattened with posterior margins slightly extended, segment 2 with rather long seta anteriorly, segment 3 short and triangular; relative lengths of tarsal segments from base as tarsus I, 5-3-3-3-6; tarsus II, 10-6-4-4-5; tarsus III, 10-11-6-5-6.

Wing (Figure 145) oval with evenly rounded, rather short-fringed hind margin, clear. Vein 2 distinctly arched, curving inward as far as 9-11 microhair rows from costa, curving forward to margin at tip; vein 3 nearly straight, ending essentially at wing apex; last of vein 4 slightly arched, ending well behind wing apex. Crossvein  $3/4$  as long as last of vein 5; vein 6 represented by long, slight fold inside of anal margin. Halter black.

Abdomen about as long as thorax, dark brown with black pollen; sternites not armed. Hypopygium (Figure 144) small, capping tip of preabdomen, brown; cerci brown, long-triangular with outer base produced, outer margin curved with ca. 20 marginal setae, 7 or 8 setae toward tip becoming very long; inner appendages pale brown, forming 2nd pair of cuneate truncate lamellae bearing ca. 4 long black setae.

FEMALE.—Similar to male with face about as wide below as antennal segment 1, anterior eye facets not much enlarged. Femora and tibiae without long ventral setae; tibia II with small distinct anterodorsal near  $1/3$ ; tarsi plain, relative lengths

of segments as tarsus I, 7-3-3-3-5; tarsus II, 8-5-4-3-5; tarsus III, 8-7-5-4-4.

TYPE DATA.—Holotype ♂, allotype ♀, 2 ♀ paratypes from Republic of Panama: Cerro Campana July 1967 W. W. Wirth (USNM 72889).

REMARKS.—The new species is similar to *Enlinia caudata* H. Robinson of Mexico in the unarmed sternites and the very elongate hypopygial lamellae of the male, but the inner lamellate appendages, the shape of the outer lamellae, the second wing vein farther from the costa, and the higher head with less enlarged anterior eye facets are all different.

### *Enlinia panamensis*, new species

FIGURES 148-152

MALE.—Length 1.0 mm; wing 1.1 by 0.4 mm. Face and front metallic blackish green; eyes essentially contiguous below, anterior facets much enlarged. Palpus small, dark brownish with prominent setae; proboscis small, brown. Antenna black; segment 3 short and blunt, arista 1.5 times as long as face.

Thorax metallic blackish green, pleura more black; setae black; 6 or 7 pairs of small acrostichals; 9 or 10 distinct pairs of small dorsocentrals; scutellum hind margin evenly rounded, bristles as near sides as middle.

Legs including coxae dark brown. Fore coxa with 1 large bristle on inner anterior surface, nearly bare apically. Femur I rather thick toward base, with only short ventrals; femur II (Figure 152) mounted on long, strongly bristled trochanter, thickened toward base, with a series of 8 or 9 long stout bristles anteroventrally, longest of these nearest base, a few shorter posterodorsals near tip; femur III broad in middle, plain. Tibia I plain; tibia II (Figure 152) slightly flattened, curved with rather long, slender anterodorsal at 2/5, numerous short erect setae ventrally near tip; tibia III wider in distal 1/2 with 3-5 rather prominent posterodorsals between 3/5 and tip. Fore tarsus (Figure 151) modified, segments 1 and 2 flattened with posterior margins extended, 1/2 of length of segment 3 behind insertion of segment 4, segment 3 with distinct apical spicule. Relative lengths of tarsal segments from base as tarsus I,

8-2-4-5-8; tarsus II, 12-5-4-3-6; tarsus III, 15-12-10-6-8.

Wing (Figure 149) rather obovate, hind margin broadly rounded, nearly straight in middle, rather long-fringed; surface clear with small dark spot behind tip of vein 3, larger brownish spot in middle of hind margin near crossvein. Vein 2 scarcely arched, scarcely turned forward at tip, close to costa throughout; vein 3 scarcely sinuous, close to vein 2 especially just before tip, ending far before wing apex; vein 4 nearly straight, ending just behind wing apex. Crossvein long, nearly 1/2 as long as last of vein 5; vein 5 aborted just beyond crossvein, slight discolored trace turning at tip and ending short of scarcely noticeable bulge in hind margin of wing; vein 6 represented by indistinct thickening along anal margin. Halter black.

Abdomen (Figure 148) about as long as thorax, cylindrical, brown with black pollen; sternite 3 with long stout curved horn in middle, horn blunt with small spur posteriorly beyond middle; sternite 4 with pair of long, slender-tipped, pale brownish lamellae. Hypopygium rather large, capping tip of preabdomen, brown; cerci small, brown, with crest of short stout black setae; inner appendages brown.

FEMALE.—Very plain. Face about as wide below as antennal segment 1, anterior eye facets not much enlarged. Fore coxa without bristle, with longer setae toward tip; femora without distinctive ventral setae; tibia II with small anterodorsal near 1/2; tarsi plain, relative lengths of segments as tarsus I, 8-2-2-2-5; tarsus II, 10-5-4-3-4; tarsus III, 14-10-8-6-6. Wing (Figure 150) oval with gradually and evenly rounded hind margin, without long fringe; vein 2 nearly as in male; vein 3 farther from vein 2; vein 4 straighter near base; wing apex midway between tips of veins 3 and 4. Abdomen without sternal projections.

TYPE DATA.—Holotype ♂, allotype ♀, 2 ♀ paratypes from Panama Canal Zone: Gamboa, Pipeline Road, July 1967 W. W. Wirth (USNM 72890).

REMARKS.—The new species is in the typical group of the genus and rather closely related to *Enlinia ornata* H. Robinson of Mexico. The new species is distinct from *E. ornata* by the less prominent dorsal setae on the hind tibiae, by the second spot and the straight hind margin of the wing, by the less complex fore tarsus, and by the nar-

rower and blunter horn on the third abdominal sternite.

### Genus *Harmstonia* Robinson

Minute, dark metallic green with mostly dark bristles. Face of male grayish pollinose, extremely narrow in lower 1/2, sides diverging above, face of female wider with few setae at lower 1/3; front broad, broader above. Palpus dark with small hairs. Pseudotracheae rudimentary with irregular thickenings. Antenna brown or black, all segments short; segment 1 bare above; segment 2 truncate; segment 3 blunt or pointed, arista dorsal. Lower postocular setae uniseriate.

Thorax with mesoscutum strongly arched, posterior slope distinctly flattened, with grayish or brownish pollen toward sides; acrostichals absent; 5 pairs of large dorsocentrals; 2 scutellars, small hair on lateral margin. Fore and middle coxae with numerous hairs and small distal bristles on anterior surface, external bristle on hind coxa. Femoral preapicals weak or indistinct.

Wing with longitudinal veins rather straight and diverging from base; crossvein about as long as or longer than last part of vein 5; vein 6 totally absent. Calypter pale with dark margin, some setae dark.

Abdomen short, tapering; sternites without noticeable specializations. Hypopygium sessile, usually large and projecting somewhat forward under preabdomen.

REMARKS.—Members of the genus frequent soil or rocks at edges of streams and lakes or moist rock surfaces near seepage and waterfalls. The adults sometimes alight but mostly hover close to the surface of the substrate. The species may be very particular regarding positions where they alight and the males of some species seem to favor slightly different habitats from the females.

The genus was originally described with two species from the eastern United States and Mexico. The later revision (Robinson, 1967b) added 11 species from Mexico, Central America, and Dominica. In addition to the single Dominican species, the following treatment includes four new species from Jamaica and Panama. A single species described recently from Cuba by Botosaneanu and Vaillant (1973) has acrostichal setulae and

an apical arista, and in this treatment it is transferred to *Enlinia*.

### *Harmstonia simplex* Robinson

*Harmstonia simplex* Robinson, 1967b:5.

MALE.—Length 1.0 mm; wing 1.17 mm by 0.42 mm. Front brown. Antennal segment 3 shortly acute.

Thorax brown with lower surfaces of pleura often yellowish; mesoscutum with blackish pollen, sparse grayish pollen on pleura.

Legs mostly brown; trochanters, distal parts of tibiae, and bases of basitarsi pale. Middle and hind femora with a few longer setae along ventral surfaces, middle femur with weak preapical. Tibiae I and III without prominent dorsals or apicals; tibia II with a weak anterodorsal and a weak posterodorsal near basal 1/3. Relative lengths of tarsal segments from base as tarsus I, 13-7-6-5-6; tarsus II, 17-11-7-6-6; tarsus III, 13-15-9-6-6.

Wing broadly elliptical. Tips of veins 2 and 3 are 1.25 times as far apart as tips of veins 3 and 4; veins 3 and 4 essentially straight, not becoming nearly parallel. Crossvein about as long as last of vein 5. Knob of halter black or brown.

Hypopygium ca. 0.25 mm long; lamella rather brownish, small and slender, bearing small branched setae, with small pale somewhat bulging area at base, with a small hooked projection on lower margin.

FEMALE.—Face bearing 2 small setae; antennal segment 3 blunt. Femora without distinct setae along ventral surfaces.

COLLECTION DATA.—Dominica: 1 ♀ Dleau Gommier 17 Mar 1956 J. F. G. Clarke; 21 ♂ and 42 ♀ 22-29 Jan, 2 ♂ 28 Feb 1964 H. Robinson, holotype ♂, allotype ♀, 29 ♂ and 26 ♀ 8 Jan-20 Mar 1965 W. W. Wirth, all Clarke Hall; 2 ♂ and 1 ♀ Clarke Hall, Manets Gutter 7 Mar 1965 W. W. Wirth; 2 ♀ North Deux Dleau River 28 Jan, 1 ♂ near Belfast 31 Jan, 3 ♂ and 3 ♀ Deux Branches, Pagua River 3 Feb, 3 ♀ South Chiltern Estate 7 Feb, 1 ♀ Trafalgar Falls 15 Mar 1964 H. Robinson; 12 ♂ 14 Jan, 5 ♂ seashore and river mouth 15 Mar 1965, all Macoucheri River, 1 ♀ 2-3 Feb, 1 ♀ 22-25 Mar 1965 Cabrits Swamp, 4 ♂ and 1 ♀ 9-12 Mar, 1 ♀ light trap 13 Mar 1965 Fond

Figures River, 1 ♂ and 2 ♀ Hodges River mouth 27 Feb, 1 ♂ Woodford Hill, swamp forest 27 Feb 1965, all W. W. Wirth.

REMARKS.—The most distinctive features of the species are the small hypopygial lamellae bearing a series of branched setae. The sexual dimorphism of the third antennal segment also is distinctive.

*Harmstonia wirthi*, new species

FIGURE 153

MALE.—Length 0.9 mm; wing 1.0 mm by 0.35 mm. Front blackish with brown pollen. Antenna black; segment 3 short and truncate, arista inserted at end of dorsal margin.

Thorax mostly brown, lower pleura pale brownish, mesoscutum with brown pollen.

Legs including coxae yellow, with tarsi brown from tips of basitarsi. Femur II with small distinct preapical bristle; femora without distinctive ventral setae. Tibiae without prominent setae. Relative lengths of tarsal segments from base as tarsus I, 12-5-4-4-5; tarsus II, 14-8-6-4-5; tarsus III, 10-12-8-6-6.

Wing narrowly elliptical. Vein 3 only very slightly curved, becoming nearly parallel with vein 4 distally. Crossvein only slightly shorter than last of vein 5. Stem of halter yellow, knob light brown.

Abdomen mostly dark brown to blackish, sternites paler brown. Hypopygium (Figure 153) ca. 0.2 mm long, paler brown basally, yellowish in apical 1/2; cerci broadly lamellate, pale yellowish, a large, bulging, inflated area at base, appendage on outer margin densely setiferous, a few slightly branched marginal setae nearer tip.

FEMALE.—Face with 2 or 3 setae above mouth.

TYPE DATA.—Holotype ♂, allotype ♀, 1 ♂ paratype from Panama Canal Zone: Gamboa, Río Agua Salud July 1967 W. W. Wirth (USNM 72891).

REMARKS.—The general form of the hypopygium and the lamellae of the new species is reminiscent of *Harmstonia pallida* Robinson of Mexico but details such as the black halteres and the branched setae of the hypopygial lamellae indicate closer relationship to *H. pectinicauda* Robinson of the United States and Mexico and *H. simplex* of Dominica.

*Harmstonia panamensis*, new species

FIGURE 154

MALE.—Length 1.0 mm; wing 1.0 by 0.4 mm. Front black with brown pollen. Antenna black; segment 3 short, truncate, lower part projecting broadly forward slightly beyond insertion of arista.

Thorax black, mesoscutum with brownish pollen, slight grayish pollen on pleura.

Legs dark brown with fore and middle trochanters rather pale. Femur II with small distinct preapical bristle, row of short, rather erect postero-dorsals more prominent in basal 1/2; femur III nearly bare below. Tibiae I and II without prominent setae; tibia III with only minute indistinct dorsal setae. Relative lengths of tarsal segments from base as tarsus I, 11-6-4-3-5; tarsus II, 13-7-6-4-5; tarsus III, 10-10-6-5-6.

Wing elliptical. Vein 3 only very slightly curved, not becoming parallel with vein 4 distally. Crossvein about as long as last of vein 5. Stem and knob of halter blackish.

Abdomen black. Hypopygium (Figure 154) ca. 0.27 mm long, black with minute hyaline lamella apically; cerci broadly lamellate, mostly brownish, short blunt tip bearing a series of stout branched setae, with bulging, rather pale, inflated area at base.

FEMALE.—Unknown.

TYPE DATA.—Holotype ♂ from Panama Canal Zone: Gamboa, Pipeline Road July 1967 W. W. Wirth (USNM 72892).

REMARKS.—The new species seems similar to *Harmstonia pectinicauda* but the hypopygial lamellae are broader with shorter tips, the outer margin of the lamella does not have such long setae, and the hind femur is without evident anteroventral setae. The new species also differs by the lack of a distinct crest of minute setae on the hind trochanter and by a different position of the hypopygium. Such a crest is prominently exposed in *H. pectinicauda* when the femora are raised and the hypopygium is brought forward to interact.

*Harmstonia acuta*, new species

FIGURES 155-157

MALE.—Length 1.1 mm; wing 1.3 mm by 0.5

mm. Front black, obscured with rather dense, gray pollen. Antenna black; segment 3 (Figure 156) 1.5 times as long as high, sharply pointed, arista inserted near basal  $1/3$  of upper edge.

Thorax blackish, mesoscutum sometimes more greenish, grayish pollen thicker toward sides and on pleura.

Legs yellow from bases of coxae, tarsi brownish from tips of basitarsi. Femora without distinctive series of ventral setae; femora II and III with a small preapical anteriorly. Tibia I without distinctive setae; tibia II with 3 small but distinct setae, 1 anterodorsal just beyond  $1/2$ , 1 posterodorsal near  $1/3$ , 1 apical anteriorly; tibia III with 2 or 3 very small indistinct posterodorsal setae. Tarsi plain, relative lengths of segments from base as tarsus I, 8-3-2-2-3; tarsus II, 8-5-4-3-4; tarsus III, 8-10-6-4-5.

Wing broadly elliptical, anal margin distinctly rounded. Veins 2 and 3 very slightly curved; vein 3 not becoming quite parallel with vein 4 distally. Crossvein slightly but distinctly longer than last of vein 5. Halter yellow.

Abdomen blackish. Hypopygium (Figure 155) ca. 0.25 mm long, rather spherical, brownish; lamella with large basal convexity which is rather transparent and bears few setae on surface, inward projection on lower margin forming long broad transparent plate, long apical setae often showing below or near base, small spur below, long seta beyond convexity, narrow arching tip with short apical seta.

FEMALE.—Antennal segment 3 (Figure 157) scarcely as long as high, slightly less sharply acute.

TYPE DATA.—Holotype ♂, allotype ♀, 1 ♂ paratype from Jamaica: Runaway Bay, stream bed, Feb 1969 W. W. Wirth (USNM 72893). Additional paratype from Jamaica: 1 ♂, Hardwar Gap, stream margin, 10 Mar 1970 Wirth and Farr.

REMARKS.—The new species is distinct from others by the form of the antenna. The sharply pointed third segment is unlike any other known member of the genus. There is a slight point on the antenna of the male of *Harmstonia simplex* but the two species do not seem very closely related. The new species lacks branched setae on the hypopygial lamellae and has yellow halteres.

### *Harmstonia jamaicensis*, new species

FIGURES 158, 159

MALE.—Length 1.1 mm; wing 1.6 mm by 0.6 mm. Front black with brown pollen. Antenna black; segment 3 (Figure 159) half as long as high, broadly truncate, arista inserted at end of upper edge.

Thorax black, mesoscutum with brownish pollen, slight grayish pollen on pleura.

Legs yellow from bases of coxae, tarsi brownish from tips of basitarsi. Femora without distinctive series of ventral setae; femur II with small preapical seta anteriorly. Tibia I without distinctive setae; tibia II with 2 small but distinct setae, 1 anterodorsal near  $2/5$ , 1 posterodorsal near  $1/3$ ; tibia III with a few very short indistinct posterodorsal setae. Tarsi plain, relative lengths of segments from base as tarsus I, 10-6-5-3-4; tarsus II, 13-6-5-3-4; tarsus III, 9-12-8-5-5.

Wing elliptical, anal margin rather shallowly rounded. Vein 3 curving very slightly, essentially parallel with vein 4 in distal  $1/3$ . Crossvein about as long as last of vein 5. Knob of halter blackish.

Abdomen black. Hypopygium (Figure 158) ca. 0.3 mm long, short-cylindrical, yellowish brown; lamella with large basal convexity which is rather transparent and bears many scattered setae on surface, a smaller lobe followed by a seta-bearing tubercle more distally along lower margin, tip slender and glabrous except for apical seta.

FEMALE.—Unknown.

TYPE DATA.—Holotype ♂ and 1 ♂ paratype from Jamaica: Hardwar Gap, stream margin, 10 Mar 1970 Wirth and Farr (USNM 72894).

REMARKS.—The key characters of the new species include the blackish halter, the lack of branched setae on the hypopygial lamellae, and the rather cylindrical hypopygial capsule.

### Subfamily PELOROPEODINAE

#### Genus *Discopygiella* Robinson

Small, yellowish or brownish with setae mostly dark. Face narrower below, wider in female, bearing hairs below in female and sometimes in male; front broad, broader above; face and front with blackish ground color. Antenna with all segments



short; segment 1 bare above; segment 2 slightly produced in middle of lateral margin; segment 3 short and broad, arista in shallow apical or subapical sinus. Lower postocular setae uniseriate, pale.

Thorax rather flattened on posterior slope; acrostichals small, biseriate; 5 large dorsocentrals; scutellum with 2 large bristles and numerous marginal hairs; proepisternum bare above, with a few pale setae below. Fore and middle coxae with numerous hairs on anterior surface, longer setae distally on fore coxa; all coxae with a bristle toward outer side. Middle and hind femora with preapical bristle. Fore tibia with short stout anterodorsals usually forming crest along distal 2/3; tibia III usually with short stout posterodorsals forming crest along distal 3/5. Tarsi plain.

Wing rather oblong-oval, slightly tinged with brown, veins brown. Veins 3 and 4 rather straight and parallel beyond crossvein; vein 2 usually slightly diverging; crossvein perpendicular to last part of vein 4, about 2/3 as long as last of vein 5; vein 6 represented by slight fold. Calypter pale with margin and crest of long setae black.

Abdomen about as long as thorax, stout, blunt, rather compressed. Hypopygium discoid, capping broad tip of preabdomen; tip of hypopygium bearing short straight dark armature and pale pubescent short appendage. Female genitalia with crest of dornen above.

REMARKS.—Members of the genus have been found on or hovering over moist rock surfaces. The genus was originally described on the basis of four species from Mexico. Two of the original species, *Discopygiella discolor* Robinson and *D. chiapensis* Robinson, have since been found in Panama. Only the following new species is known from Dominica.

***Discopygiella maculata*, new species**

MALE.—Length 1.8 mm; wing 1.8 mm by 0.65 mm. Face slightly less than 1/2 as wide below as above, with 2 pairs of setae near mouth, lower pair on clypeus sometimes reduced or lacking; face and front with grayish brown pollen. Palpus black; proboscis brownish yellow. Antenna yellowish; segment 3 brown with small rounded pubescent tip, arista from near middle of dorsal edge.

Thorax mostly brown, darker on mesoscutum and disk of scutellum, yellow on lower pleura, dulled with yellowish pollen.

Legs mostly yellow, 5th tarsal segments brownish. Fore tibia with low but distinct crest of about 9 short anterodorsals along distal 2/3, sometimes a small indistinct posterodorsal near basal 1/4; tibia II with anterodorsals and posterodorsals paired near 1/4 and 3/5, no ventrals, 4 apicals; tibia III with anterodorsals and posterodorsals paired near 1/4 and 1/2, posterodorsal crest indistinct, hairs of series scarcely thickened, no ventrals, 4 apicals. Relative lengths of tarsal segments from base as tarsus I, 13-6-5-5-4; tarsus II, 17-9-7-5-5; tarsus III, 8-13-9-6-6.

Wing clear with pale brownish veins. Crossvein 1/2 to 2/3 as long as last of vein 5. Halter yellow.

Abdomen with tergites dark brown, venter yellow. Hypopygium brown.

FEMALE.—Face slightly more than 1/2 as wide below as above, setae as in male; antennal segment 3 with tip shorter, arista more apical. Abdomen with sides of tergite 3 and adjacent margins of tergites 2 and 4 yellow, middorsum of tergite 3 left as prominent round brown spot.

TYPE DATA.—Holotype ♂, allotype ♀, 3 ♂ and 2 ♀ paratypes from Dominica: Dleau Morne Laurent 21 Mar 1964 H. Robinson (USNM 72895). Additional paratypes from Dominica: 4 ♂ and 4 ♀ Deux Branches, Pagua River 3 Feb, 3 ♂ and 2 ♀ South Chiltern Estate 6-7 Feb, 1 ♂ near Layou 25 Feb, 1 ♂ Clarke Hall 26 Feb 1964, all H. Robinson; 1 ♂ and 2 ♀ 16-17 Mar 1964 H. Robinson, 1 ♂ 23 Jan, 1 ♀ rain forest 9 Feb 1965 W. W. Wirth, Fond Figues River; 7 ♂ and 1 ♀ Clarke Hall, Manets Gutter 7 Mar 1965 W. W. Wirth.

REMARKS.—The new species is most like *Discopygiella setosa* Robinson of Mexico with two pairs of dorsals on both the middle and hind tibiae, but the hind tibia lacks a ventral and has a less prominent crest, the tip of the third antennal segment is more prominent, and the lower pleura and abdominal sternites are more yellow. The most distinctive feature of the new species is the coloration of the female abdomen. The pattern is undoubtedly a guide to the male during copulation.

### Genus *Micromorphus* Mik

Small, dark brown or blackish with setae mostly black. Face broad above, usually narrowed below, without setae; front broad, broader above. Palpus small with small apical seta. Pseudotracheae geminately sclerotized. Antenna dark with short segments; segment 1 bare above; segment 2 truncate apically; arista dorsal. Head not very concave behind vertex; postocular setae uniseriate.

Thorax with posterior slope of mesoscutum distinctly flattened; acrostichals absent; 6 pairs of dorsocentrals; scutellum with 2 large bristles, no hair on lateral margin; proepisternum bare above, with 1 dark seta near fore coxa. Fore and middle coxae with numerous setae on anterior surface, longer setae distally on fore coxa; all coxae with bristle toward outer side. Middle and hind femora with a preapical bristle. Femora, tibiae, and tarsi plain.

Wing rather oblong-oval. Veins 2 and 3 and last part of vein 4 nearly straight, 2 and 3 gradually diverging, 3 and last of 4 essentially parallel; vein 4 ending in or near wing apex; crossvein perpendicular to last of vein 4, ca.  $1/3$  to  $1/2$  as long as last of vein 5; vein 6 represented by slight fold.

Abdomen slightly longer than thorax, stout, tapering; setae short. Hypopygium small, rather short-cylindrical, borne under tip of preabdomen. Female genitalia with crest of dornen above.

REMARKS.—Ten species of *Micromorphus* have recently been recognized from America (Robinson, 1967d). One species is recognized here from Dominica and a second species is reduced to its synonymy.

#### *Micromorphus albipes* (Zetterstedt)

*Hydrophorus albipes* Zetterstedt, 1843:454.

*Achalcus caudatus* Aldrich, 1902:93.

MALE.—Length 1.1 mm; wing 1.4 mm by 0.5 mm. Face narrow below, as wide as antennal segment 1, broader above, covered with brownish pollen with grayish areas bordering eyes; front with dull brownish pollen. Palpus and proboscis black. Antenna black; segment 3 slightly broader than long, with very short point, arista from beyond middle of short dorsal edge. Lower postocular setae pale.

Thorax blackish.

Legs yellow with outer surface of middle coxa usually brownish; setae of fore coxa rather pale. Femora plain. Fore tibia without distinct bristles; tibia II with large anterodorsal near  $1/2$ , small posterodorsal near  $1/4$ , 2 apicals ventrally; tibia III with rather small anterodorsal near  $1/3$ , small posterodorsals near  $1/5$  and  $3/5$ , 1 or 2 small apicals.

Wing clear with veins brown. Vein 3 nearly as far from tip of vein 2 as from tip of vein 4, slightly farther from vein 4 near tip than at crossvein. Crossvein ca. 2.5 times as long as last part of vein 5. Calypter and setae dark; halter dark.

Abdomen dark, dulled with pollen. Hypopygium dark, more reddish brown toward tip, truncate with circular apical depression, upper margin with slender pair of short-branching projections; lamellae broadly rounded, short, often retracted with only pale setae visible.

FEMALE.—Face slightly wider, with wider pale margin.

COLLECTION DATA.—Dominica: 1 ♂ near Layou 27 Jan 1964 H. Robinson; 14 ♂ and 7 ♀ 29 Jan 1964 H. Robinson, 7 ♂ and 1 ♀ 2–6 June 1966 G. Steyskal, all Clarke Hall; 2 ♂ near Sylvania 9–10 Feb, 2 ♂ and 1 ♀ Fond Figue River 17 Mar 1964 H. Robinson; 4 ♂ and 7 ♀ Macoucheri, river mouth 14 Jan, 2 ♂ and 1 ♀ Pagua Bay 18 Feb, 2 ♂ Hodges River mouth, swamp forest 27 Feb, 1 ♂ Woodford Hill, swamp forest 27 Feb 1965, all W. W. Wirth.

REMARKS.—The species is reported from the southeastern United States, Mexico, Costa Rica, Panama, West Indies, Europe, and New Zealand. Some variation in the hypopygium is recognized in the present concept of the species. *Achalcus caudatus* Aldrich was recognized as a *Micromorphus* in my previous treatments (1964, 1967d) but considered probably distinct. Examination of the genitalia has been very difficult because of the minute size of the parts, but it now seems that broad, short lamellae are present in all the specimens of *M. albipes*. In Dominica, a few specimens from the interior of the island show slight differences from the more abundant material from near the coast, but all seem best treated as one species.

### Genus *Peloropecodes* Wheeler

Small to medium sized with setae black. Face very narrow below but continuous to mouth, much wider in female, without setae; front broad, much broader above. Palpus small, oval, with small black apical setae. Pseudotracheae 6, geminately sclerotized. Antenna with segments 1 and 2 short; segment 1 bare above; segment 2 truncate apically; segment 3 short or elongate, arista dorsal or apical. Head not strongly excavated behind vertex; postocular setae uniseriate.

Thorax with mesoscutum slightly flattened on posterior slope; acrostichals medium sized, usually uniseriate; 5 or 6 pairs of distinct dorsocentrals; scutellum with 2-4 bristles, 2 or more hairs on disk or margin; proepisternum with 1 seta below. Fore and middle coxae short with numerous hairs anteriorly and bristles distally, males often with thorn of compacted setae on tip of middle coxa; hind coxa with 1 large external bristle. Femora with preapical bristles, often with rows of ventral setae in males. Male fore tarsus with inner claw of 5th segment large and appressed.

Wings oval to narrowly oval. Veins 2 and 3 diverging distally; vein 4 usually nearly parallel

with vein 3 beyond crossvein. Crossvein usually perpendicular to base of vein 4, shorter than last part of vein 5; vein 6 represented by slight fold.

Abdomen short and stout, about as long as thorax; hind margin of last male sternite modified. Hypopygium large, sessile, very broad and stout, usually with all appendages rather short; cerci rarely elongate. Female genitalia with crest of dornen above.

REMARKS.—The genus is widely distributed in the Western Hemisphere but only two species are known from Europe and none are reported from the rest of the Eastern Hemisphere. Four species are known from Dominica.

The recently described Cuban genus and species *Neorhaphium spinitarse*, as described and illustrated by Botosaneanu and Vaillant (1973:418), is a species of *Peloropecodes* having an apical arista. The third antennal segment of *Peloropecodes spinitarsis* (Botosaneanu and Vaillant), new combination, is longer than that in *P. dominicensis*, new species, of Dominica and nearly as long as that in the type-species, *P. salax* Wheeler of the eastern United States.

### Key to the Species of *Peloropecodes* in Dominica

1. Fore tibia with a series of 4 large black dorsal setae ..... *P. similis*  
Fore tibia with only 1 or 2 small dorsal setae ..... 2
2. Pleura partly yellowish; antennal segment 3 of male short, as long as wide; male middle coxa without special apical setae ..... *P. debilis*  
Pleura wholly dark; antennal segment 3 of male 1.5 to 2 times as long as wide; male middle coxa with distinct cluster of special, blunt apical setae ..... 3
3. Basal segments of antenna yellow; arista of both male and female dorsal; middle femur of male with long, usually sinuous, ventral seta toward base; hypopygium bearing erect slender hairy cerci below ..... *P. frater*  
Antennae wholly black; arista of male apical; middle femur with only series of anteroventral setae toward base; hypopygium without evident cerci ..... *P. dominicensis*

### *Peloropecodes similis* (Aldrich)

FIGURES 176-178

*Sympycnus similis* Aldrich, 1896:336.

MALE.—Length 1.8 mm; wing 1.8 mm by 0.65 mm. Face and front green or blue with grayish pollen. Palpus and proboscis black. Antenna black; segment 3 (Figure 178) triangular, pointed, about as long as broad, arista from beyond middle of dorsal edge. Lower postocular setae pale.

Thorax dark metallic bluish with brownish pollen, pleura dark with grayish pollen; 6 acrostichals; scutellum with 2 large bristles, small hair on lateral margin.

Legs mostly yellow; anterior or outer surfaces of coxae, upper edge of hind femur, and 5th segments of tarsi dark. Middle coxa without specialized setae. Femora nearly bare below; femur II with 1 or a few very slender, erect, long ventrals in basal 1/3. Tibia I with 4 large stout curved

dorsal setae; tibia II with large anterodorsals at 1/3 and 2/5, smaller posterodorsals at 1/5 and 1/2, 4 apicals; tibia III with small anterodorsals at 1/5 and 1/2, smaller posterodorsals at 1/6 and 3/5, 1 subapical above, 2 apicals anteriorly. Relative lengths of tarsal segments from base as tarsus I, 11-6-3-3-3; tarsus II, 17-11-7-5-5; tarsus III, 10-18-12-8-6.

Wing narrowly oval, clear; veins brown. Veins 2 and 3 curving slightly backward, 3 curving slightly forward at tip, ending about halfway between tips of veins 2 and 4; last part of vein 4 straight, ending in wing apex. Crossvein perpendicular to last part of vein 4, 2/3 as long as last of vein 5. Calypter pale with dark margin and setae; halter pale.

Abdomen including venter metallic bluish green with yellowish pollen; hind margin of sternite 3 (Figure 177) with median sinus which is strongly black-rimmed, numerous hairs toward sides. Hypopygium (Figure 176) brown with rather granular surface; cerci not evident; inner appendages short, convoluted, yellowish brown.

**FEMALE.**—Face wider, 1.5 times as wide as antennal segment 3; antennal segment 3 essentially as in male. Middle femur without longer ventrals; fore tibia with large dorsals as in male; fore tarsus plain.

**COLLECTION DATA.**—Dominica: 5 ♂ and 9 ♀ Batali River 2 Feb 1964 H. Robinson; 1 ♂ La Ronde River 15 Feb 1964 H. Robinson.

**REMARKS.**—The species apparently is widely distributed in the Lesser Antilles.

### *Peloropecodes debilis*, new species

FIGURES 172-175

**MALE.**—Length 1.6 mm; wing 1.9 mm by 0.6 mm. Face and front blackish green, front with brownish pollen, face with grayish pollen. Palpus brown; proboscis light brown. Antennal segments 1 and 2 usually slightly yellowish; segment 3 (Figure 173) dark brown, triangular, pointed, as long as wide, arista from middle of dorsal margin. Lower postocular setae rather pale.

Thorax dark metallic green or blue with brown pollen, gray pollen on pleura, lower part of pleural hind margin rather pale; 6 or 7 acrostichals;

scutellum with 2 large bristles, small hair on lateral margin.

Legs mostly yellow, 5th tarsal segments dark. Middle coxa without specialized apical setae. Middle femur with 1 or 2 long setae anteroventrally near basal 1/3. Tibia I with posterodorsal near 1/3; tibia II with large anterodorsals at 1/5 and 3/5, smaller posterodorsals near 1/5 and 1/2, 4 apicals; tibia III with 2 anterodorsals at 1/5 and 3/5, small posterodorsals at 1/6 and 1/2, 1 large subapical posterodorsally, 2 apicals anteriorly. Relative lengths of tarsal segments from base as tarsus I, 14-8-6-5-4; tarsus II, 20-10-8-6-4; tarsus III, 9-17-11-7-5.

Wing narrowly oval, clear; veins brown. Veins 2 and 3 curving only slightly backward; vein 3 curving slightly forward at tip, ending about halfway between tips of veins 2 and 4; last part of vein 4 straight, ending in wing apex. Crossvein perpendicular to last of vein 4, 2/3 as long as last of vein 5. Calypter pale with dark margin and setae; halter pale.

Abdomen brownish with reddish reflections, paler basally on sides and venter; hind margin of sternite 3 (Figure 175) shallowly and slightly bilobed, without distinct setae. Hypopygium (Figure 172) brown with rather granular surface; cerci not evident; inner appendages short, convoluted, yellowish brown.

**FEMALE.**—Face wider, 1.5 times as wide as antennal segment 3; antennal segment 3 (Figure 174) as in male. Middle femur without longer setae below; 5th segment of fore tarsus plain.

**TYPE DATA.**—Holotype ♂ and 2 ♂ paratypes from Dominica: Boeri Lake trail 23 Mar 1964 H. Robinson (USNM 72896). Allotype ♀ from Dominica: Freshwater Lake 21 Feb 1964 H. Robinson. Additional paratypes from Dominica: 4 ♂ and 4 ♀ 28 Jan, 3 ♂ and 1 ♀ North Deux Dleau River 14 Feb 1964 H. Robinson; 2 ♂ and 1 ♀ South Chiltern Estate 6 Feb, 4 ♂ and 7 ♀ near Sylvania 9-10 Feb 1964 H. Robinson; 1 ♂ and 1 ♀ Sylvania 9-10 Feb 1964 D. F. Bray; 1 ♂ and 2 ♀ Syndicate Estate 6 Mar 1964; 2 ♀ 17 Mar 1964 H. Robinson, 1 ♂ 9-12 Mar 1965 W. W. Wirth, all Fond Figues River; 2 ♀ Clarke Hall, Manets Gutter 5 Mar, 1 ♀ Layou River mouth 8 Mar 1965 W. W. Wirth; 1 ♂ Pont Casse, 2 miles east 5 May 1966 R. J. Gagné.

**REMARKS.**—The new species is distinguished

locally by the yellowish portion of the pleural surface. In most structures—such as the third antennal segment of the male, the hairs on the scutellum, and the apical setae of the middle coxa—the species is rather unspecialized.

*Peloropecodes frater* (Aldrich)

FIGURES 179–182

*Sympycnus frater* Aldrich, 1902:83.

**MALE.**—Length 2.3 mm; wing 2.3 mm by 0.8 mm. Face and front blackish green, front with brownish pollen, face with grayish pollen. Palpus brown; proboscis light brown. Antennal segments 1 and 2 usually rather yellowish; segment 3 (Figure 181) dark brown, triangular, acute, 1.5 to 2 times as long as wide, arista from basal 1/3 of dorsal margin. Lower postocular setae rather pale.

Thorax dark metallic greenish with brown pollen, pleura dark with gray pollen; 6 acrostichals; scutellum with 2 large bristles, rather large hair on lateral margin.

Legs mostly yellow, base of middle coxa and 5th tarsal segments brownish. Middle coxa with a number of crowded blunt black setae apically. Middle femur with ca. 7 larger anteroventral setae, 1 ventral near basal 1/3 very long with a sinuous tip; femur III with ca. 6 longer anteroventral setae, a series of shorter, rather indistinct posteroventrals along basal 1/2. Tibia I with small anterodorsals near 1/4 and 2/3; tibia II with large anterodorsals at 1/4 and 3/5, smaller posterodorsals near 1/6 and 1/2, 4 or 5 apicals; tibia III with 2 anterodorsals at 1/5 and 2/5, 2 smaller posterodorsals near 1/6 and 1/2, 1 large posterodorsal near apex, 2 apicals anteriorly. Relative lengths of tarsal segments from base as tarsus I, 17–7–5–3–5; tarsus II, 24–17–11–6–6; tarsus III, 12–22–14–8–6.

Wing narrowly oval, clear; veins brown. Vein 2 curving only slightly backward; vein 3 more strongly curved except slight forward curve at tip, ending slightly nearer tip of vein 4 than 2; last part of vein 4 straight, ending in wing apex. Crossvein perpendicular to last of vein 4, 2/3 as long as last of vein 5. Calypter pale with dark margin and setae; halter pale.

Abdomen including venter dark metallic

greenish dulled with yellowish or grayish pollen; hind edge of sternite 3 (Figure 179) with pale membranous margin interrupted centrally by 3 narrow black ridges that project posteriorly as teeth. Hypopygium (Figure 180) brown with rather granular surface; cerci long and narrow with long hairs; inner appendages short, convoluted, yellowish brown.

**FEMALE.**—Face wider, 1.5 times as wide as antennal segment 3; antennal segment 3 (Figure 182) only slightly longer than wide. Middle coxa plain; femora without longer setae below; 5th segment of fore tarsus plain. Wings slightly more broadly ovate.

**COLLECTION DATA.**—Dominica: 9 ♂, 2 ♀, and pair in copulation 22–29 Jan 1964 H. Robinson, 1 ♀ 12–17 Nov 1964 P. J. Spangler, 1 ♂ cocoa trail 16 Jan, 1 ♂ malaise trap 21–31 Jan 1965 W. W. Wirth, 4 ♂ 20 May–4 June 1966 G. Steyskal, all Clarke Hall; 5 ♂ and 4 ♀ Batali River 30 Jan–2 Feb, 1 ♂ near Belfast 31 Jan, 1 ♂ Check Hall River near Sylvania 1 Feb, 1 ♂ Deux Branches, Pagua River 3 Feb, 1 ♂ South Chiltern Estate 7 Feb, 3 ♀ near Sylvania 9 Feb, 1 ♀ La Ronde River 15 Feb, 2 ♀ Freshwater Lake 23 Feb 1964, all H. Robinson; 1 ♂ Pont Casse, 1.5 miles north 12 Feb, 1 ♂ Pagua Bay 18 Feb, 3 ♂ Layou River mouth 8 Mar, 2 ♂ 9–12 Mar, 1 ♂ light trap 13 Mar 1965 Fond Figues River, all W. W. Wirth; 1 ♂ Pont Casse, 2 miles NW 16 May 1965 D. R. Davis.

**REMARKS.**—The species is presently known from Grenada and Dominica in the Lesser Antilles. Specimens from both islands show the long, triangular third antennal segment, the long, slender cerci, and the special setae on the tip of the middle coxa. Specimens of the type series from Grenada do not have the basal seta of the middle femur as long or as sinuous.

*Peloropecodes dominicensis*, new species

FIGURES 183–186

**MALE.**—Length 1.8 mm; wing 1.9 mm by 0.7 mm. Face and front blackish green or blue with brownish pollen, face with grayish pollen. Palpus and proboscis brown. Antenna black; segment 3 (Figure 185) triangular, acute, twice as long as high, arista apical. Lower postocular setae pale.



Thorax dark metallic green or blue with brown pollen, pleura dark with gray pollen; 5 acrostichals; scutellum with 2 large bristles, small hair on lateral margin.

Legs including coxae mostly yellow, 5th segments of tarsi brownish. Middle coxa with small cluster of distinctive blunt setae. Middle femur with ca. 5 slender, rather erect anteroventrals along basal 1/2; femur III with a few longer anteroventrals distally. Tibia I with small antero-dorsal near 3/4, 1 or 2 others smaller and indistinct; tibia II with large anterodorsals at 1/4 and 3/5, smaller posterodorsals at 1/5 and 1/2, 4 apicals; tibia III with small anterodorsals at 1/5 and 1/2, smaller posterodorsals at 1/6 and 3/5, 1 subapical dorsally, 2 or 3 apicals. Relative lengths of tarsal segments from base as tarsus I, 13-7-5-4-5; tarsus II, 18-11-8-5-5; tarsus III, 10-13-10-7-6.

Wing narrowly oval, clear; veins brown. Vein 2 curving slightly backward; vein 3 more curved except curving slightly forward at tip, ending slightly nearer tip of vein 4 than vein 2; last part of vein 4 straight, ending in wing apex. Crossvein perpendicular to last of vein 4, 2/3 as long as last of vein 5. Calypter pale with dark margin and setae; halter pale.

Abdomen including venter dark metallic green with yellowish and grayish pollen; hind edge of sternite 3 (Figure 184) with deep median notch, many marginal hairs toward sides. Hypopygium (Figure 183) brown, with rather dull surface; cerci not evident; inner appendages short, convoluted, yellowish brown.

**FEMALE.**—Face wider with nearly straight sides, 1.5 times as wide as height of antennal segment 3, obscured with grayish pollen; antennal segment 3 (Figure 186) only about as long as high, bluntly pointed, arista dorsal near distal 1/3 of upper edge just above tip. Femora without longer erect ventral setae; fore tarsus plain.

**TYPE DATA.**—Holotype ♂ from Dominica: Clarke Hall 19 Feb 1964 H. Robinson (USNM 72897). Allotype ♀, 8 ♂, and 9 ♀ paratypes from Dominica: near Sylvania 9-10 Feb 1964 H. Robinson. Additional paratypes from Dominica: 1 ♀ near Sylvania 9 Feb 1964 D. F. Bray; 1 ♀ Boeri Lake trail 22 Feb 1964 H. Robinson; 1 ♂ South Chiltern Estate 2 Feb 1965 W. W. Wirth.

**REMARKS.**—The new species is near *Peloropecodes falco* (Aldrich) of St. Vincent and Grenada

in certain features, but that species has the third antennal segment shorter and not quite as hairy, the arista subapical, the fore femur with more prominent posteroventrals distally, the middle femur with a distinct anteroventral row of short, very black setae, and the fore tibia with longer, more irregular dorsal hairs.

## Subfamily DIAPHORINAE

### Genus *Achradocera* Becker

Small to medium sized, metallic green with mostly black bristles. Face narrow, narrowest in middle, clypeus of male turned under and not visible; front broad, broader above. Pseudotracheae geminately sclerotized. Antennae with segment 1 bare above, truncate apically; segment 2 truncate apically or projecting slightly into 3rd; segment 3 enlarged, with broad base constricted into short or long narrow tip, arista apical. Postocular setae multiseriate, forming prominent stiff beard in male.

Thorax with mesoscutum rather evenly rounded; acrostichals small, biseriate; 5 or 6 pairs of distinct dorsocentrals; scutellum with a large pair of bristles, usually a small hair on lateral margin; 1 or 2 small setae above anterior coxa. Fore and middle coxae with numerous hairs anteriorly, larger setae or bristles distally; middle and hind coxae with a large bristle nearer base. Femora without distinct preapical bristles; middle femur and all but upper edge of fore femur usually yellow, hind femur green and sometimes distorted in male. Pulvilli not or scarcely enlarged.

Wing oblong-oval. Costa reaching tip of vein 4; vein 3 slightly to distinctly diverging from vein 2, straight or gradually curved backward distally, essentially parallel to last part of vein 4; vein 4 ending in wing apex; crossvein shorter than last of vein 5; vein 6 represented by slight fold.

Abdomen about as long as thorax, cylindrical or slightly tapering; tergites with slightly longer setae on margins. Hypopygium capping tip of preabdomen, without prominent setae at base, with upper surface arched; appendages short. Female genitalia with crest of dornen above.

**REMARKS.**—The genus is widely distributed in the Western Hemisphere. Species occur in moist areas on soil and low foliage. The group is often

regarded as a subgenus of *Chrysotus* (Robinson, 1970b). Separate generic status is restored here for the very natural group of more than 12 species which is sharply distinguished by the multiseriata postocular setae and the abruptly drawn-out tip of the third antennal segment of the male. Only the single following species is known from Dominica.

***Achradocera apicalis* (Aldrich)**

*Chrysotus apicalis* Aldrich, 1896:330.

MALE.—Length 2.2 mm; wing 2.0 mm by 0.7 mm. Face and front metallic green dulled by yellowish pollen, slightly denser pollen on face; face only  $1/3$  as wide below as high, narrowest in middle by slight curve of lateral margins. Palpus yellow with some small black setae; proboscis brown. Antenna black; segment 2 spherical with short setae; segment 3 2–3 times as long as basal height, broad basal  $1/3$  constricted into narrowly linear distal  $2/3$ , arista apical or very slightly subapical, slightly less than twice as long as segment 3. Lower postocular setae very prominent, dense, white.

Thorax metallic bright green, mesoscutum dulled with yellowish pollen anteriorly, slight grayish pollen on pleura; 6 distinct pairs of dorso-centrals with anterior pair rather small.

Fore coxa, hind femur, and upper edge of fore femur dark greenish, middle and hind coxae and all tarsi from tips of basitarsi brown; hairs and bristles mostly black. Fore coxa with fine pale hairs anteriorly but these not prominent, darker setae toward tip. Fore femur with some longer setae posteroventrally toward tip; femur III with 1 or 2 longer anteroventrals and posteroventrals at tip. Tibia I with small indistinct dorsal near base; tibia II with small but distinct anterodorsal near  $1/4$ , 4 small apicals; tibia III with 2 small distinct anterodorsals at  $1/5$  and  $1/2$ , 1 distinct posterodorsal near  $2/3$ , other posterodorsals near  $1/5$  and  $1/2$  usually indistinct. Tarsi plain, relative lengths of segments from base as tarsus I, 7–4–3–2–2; tarsus II, 11–5–3–2–2; tarsus III, 7–5–3.5–3–2.

Wing narrowly oblong, clear; veins brown. Vein 2 essentially straight; vein 3 very slightly curved backward, parallel to last part of vein 4. Cross-vein  $2/3$  as long as last of vein 5. Calypter and

halter pale yellow, setae of former brownish with pale reflections.

Abdomen bright metallic green, sometimes with reddish reflections; hairs black, short, marginal setae scarcely distinct except on sides of tergite 1. Hypopygium dark metallic green at base; appendages pale, very short.

FEMALE.—Face and front more bluish green, broader, face  $1/2$  as wide as high with clypeus forming lower  $1/3$ ; palpus with only tip yellow; antennal segment 3 short-triangular, shorter than high, arista in slight apical notch; lower postocular setae not as prominent as in male. Bristles of tibiae slightly larger than in male, tibiae with a few additional very indistinct posterodorsals and posteroventrals. Wing slightly more oval.

COLLECTION DATA.—Dominica: 4 ♂ and 2 ♀ 24–29 Jan 1964 H. Robinson, 1 ♂ and 2 ♀ 8–20 Jan, 2 ♂ malaise trap 11–20 Feb, 4 ♂ and 1 ♀ light trap 1–10, 21–31 Mar 1965 W. W. Wirth, 5 ♂ and 2 ♀ 3 Apr–23 May 1966 R. J. Gagné, 6 ♂ 6–12 June 1966 G. Steyskal, all Clarke Hall; 4 ♂ and 22 ♀ near Layou 27 Jan–12 Feb, 1 ♂ Batali River 30 Jan, 1 ♂ South Chiltern Estate 8 Feb 1964 H. Robinson; 2 ♂ Anse Bouleau 10 Oct 1964 P. J. Spangler; 1 ♂ Fond Figue River 23 Jan, 1 ♂ Grande Savane 1 Feb, 30 ♂ and 10 ♀ Cabrit Swamp 22–25 Mar 1965 W. W. Wirth; 2 ♂ Portsmouth 1–2 Apr 1966 R. J. Gagné.

REMARKS.—The species apparently is widely distributed in the West Indies. The species is synonymized with *Achradocera barbata* (Loew) in some treatments, but it is distinct by the much shorter third antennal segment of the male.

**Genus *Asyndetus* Loew**

Rather small with black setae, often with dense grayish pollen. Face and front flat, nearly equally broad with straight sides, obscured or opaque with dense pollen, narrow clypeus of male turned under and not visible. Pseudotracheae geminately sclerotized. Antennae with segment 1 bare above, truncate apically; segment 2 overlapping 3rd above and on sides, very short below; segment 3 slightly to greatly enlarged, arista dorsal or subapical. Postocular setae multiseriata.

Thorax with mesoscutum rather evenly rounded; acrostichals small or lacking; 5 pairs of large

dorsocentrals; scutellum with 2 large bristles, usually a small seta on lateral margin; a small seta or series above anterior coxa. Fore and middle coxae with numerous sometimes coarse hairs anteriorly, larger setae distally; middle and hind coxae with a large bristle near base. Femora without distinct preapical bristles. Pulvilli sometimes enlarged.

Wing oblong-oval. Costa ending at tip of vein 3; vein 1 reaching slightly beyond length of discal cell; vein 3 close to vein 2 and ending well before wing apex; vein 4 weak distally, slightly offset and often discontinuous in last part, scarcely reaching margin, ending behind wing apex; crossvein very short, rather near wing base and remote from

margin; vein 6 represented by slight fold.

Abdomen slightly longer than thorax, cylindrical or slightly tapering; tergites with slightly longer setae on margins. Hypopygium small, capping tip of preabdomen, capsule bearing 3–5 distinct bristles posteriorly, upper surface arched; appendages short. Female genitalia with a crest of dornen above.

REMARKS.—The genus is widely distributed in coastal areas and around some inland lakes. Eight species are recognized from the West Indies in the present treatment and these can be distinguished by the following key. Two species are recognized from Dominica. Descriptions also are given of some additional West Indian species.

### Key to the Species of *Asyndetus* in the West Indies

1. Fore and middle tibiae yellow; male antenna with segment 3 angular below (eastern United States, West Indies, South America) ..... *A. syntormoides*  
All tibiae brown or black ..... 2
2. Face, front, and thorax with thin pollen partially obscuring metallic green color; male fore tarsus with 5th segment enlarged and basitarsus bearing a row of long setae below, pulvilli not enlarged; male palpi long and narrow with long reflexed apical black setae, surface of eyes short-bearded below (Puerto Rico) ..... *A. pogonops*  
Face, front, and dorsum of thorax opaque with white or grayish pollen; segments of male fore tarsus plain, with enlarged pulvilli; male palpi short; eyes not bearded below ..... 3
3. Wing vein 1 reaching over 1/2 distance to tip of vein 2; all male pulvilli longer than their 5th tarsal segments ..... 4  
Wing vein 1 not reaching quite 1/2 distance to tip of vein 2; only male fore tarsi with pulvilli longer than 5th segment ..... 5
4. Male face higher than wide, as wide as front; antennal segment 2 scarcely longer above; mesoscutum with brownish pollen between rows of dorsocentrals (Cuba, Jamaica, Antigua) ..... *A. interruptus*  
Male face as wide as high or wider, slightly narrower than front; antennal segment 2 distinctly longer above; mesoscutum evenly grayish or whitish pollinose above (Dominica, Florida) ..... *A. bredini*
5. Acrostichals distinctly biseriate; middle tibia with 1 distinct ventral bristle; hind tibia usually with 3 pairs of dorsals; wing vein 3 distinctly curved distally ..... *A. dominicensis*  
Acrostichals in a single staggered row or lacking; middle tibia without distinct ventral bristles; middle and hind tibiae usually with 2 pairs of dorsals; wing vein 3 not or scarcely curved distally ..... 6
6. All femora of male with long, delicate, black hairs below that are scarcely as long as the width of femora (Puerto Rico) ..... *A. exiguus*  
Femora with most ventral hairs less than half as long as width of femora ..... 7
7. Acrostichals mostly or completely absent; male hind femur and sides of abdomen without longer hairs (Mona Island) ..... *A. deficiens*  
Acrostichals in continuous row; ventral surface of male hind femur and sides of abdomen with somewhat longer hairs (Jamaica, St. Vincent) ..... *A. fratellus*

### *Asyndetus bredini*, new species

MALE.—Length 3.5–5.0 mm; wing 3.2–4.3 mm by 1.2–1.6 mm. Face as wide as high, not recessed,

white pollinose; front slightly but distinctly wider than face, metallic green almost completely obscured by yellowish white pollen. Palpus and proboscis black, former with numerous black

setae. Antenna black; segment 2 somewhat produced above and on sides; segment 3 swollen at base, lower edge oblique to short, sometimes sharp, point, arista from distal 1/4 of upper edge very near tip. Lower postocular setae white.

Thorax opaque with yellowish gray pollen above, nearly opaque with gray pollen on pleura and coxae; acrostichals distinctly biseriate; scutellum with hair of lateral margin usually large; series of 4 or 5 small setae above fore coxa with upper ones progressively shorter.

Legs dark, a little yellow at knees, coxae and femora metallic green. Setae on anterior surfaces of coxae coarse, black. All femora with rather irregular series of anteroventral and posteroventral setae mostly ca. 3/4 as long as widths of femora, some stouter ventral bristles at tip of femur II and on distal 3/4 of femur III, stout bristles along median anterior surface of femora II and III, 2 or 3 dorsals at tip of femur III. Tibia I with 3 rather large anterodorsals at 1/5, 2/5, and 3/5, small apicals posterodorsally and posteroventrally; tibia II with ca. 5 large bristles scattered over antero-dorsal surface, 4 smaller posterodorsals, 1 or 2 large anteroventrals distally, 2-4 small to large posteroventrals, 6 large apicals; tibia III with ca. 20 large bristles scattered over anterodorsal, dorsal, and posterodorsal surfaces, 2-8 large anteroventrals, some longer hairs near base posteriorly, 5 large apicals dorsally, ventrally, and anteriorly. Tarsi with last segment slightly broadened, pulvilli all fully enlarged, tarsus I slightly felted ventrally, basitarsi II and III with spicules ventrally; relative lengths of tarsal segments from base as tarsus I, 17-6-5-3-5; tarsus II, 18-8-5-4-5; tarsus III, 21-10-8-5-5.

Wing grayish with yellowish brown veins; anal margin fully rounded. Vein 1 reaching nearly 1/2 length of wing; vein 3 distinctly curved backward near tip; last part of vein 4 scarcely continuous at bend, usually bent at right angle. Crossvein 1/4 as long as last of vein 5. Calypter, setae, and knob of halter whitish.

Abdomen metallic green dulled with gray pollen; hairs mostly short, hairs of sternites longer. Hypopygium dark brown, usually bearing 4 stout bristles posteriorly.

**FEMALE.**—Face higher by width of narrow clypeus; antenna as in male. Fore and middle coxae with less coarse setae anteriorly; femora

without long setae or bristles below; tibiae II and III with small anteroventrals; last segments of tarsi not broader, pulvilli not enlarged. Wing vein 1 sometimes not reaching beyond 2/5 of wing length.

**TYPE DATA.**—Holotype ♂, 3 ♂ and 3 ♀ paratypes from Dominica: near Layou 12 Feb 1964 H. Robinson (USNM 72898). Allotype ♀ from Dominica: near Layou 18 Feb 1964 H. Robinson. Additional paratypes from Dominica: 11 ♂ near Layou 27-30 Jan 1964 H. Robinson; 1 ♂ and 1 ♀ near Layou, on sea grape 12 Feb 1964 D. F. Bray. Paratype from Florida: 1 ♂ Lake Worth, Mrs. Slosson.

**REMARKS.**—The new species is one of two species in the West Indies with very similar characters and mostly overlapping ranges. It has been necessary to rely on certain subtle details in the original description to guess which of the two species is *Asyndetus interruptus* Loew. The choice may prove in error if the Poey collection in Havana can be examined in regard to the critical differences. My present concept of *A. interruptus* is based on the specimens described below which show significant differences in the width of the face, the shape of the second and third antennal segments, and in the coloration of the thorax.

### *Asyndetus interruptus* (Loew)

*Diaphorus interruptus* Loew, 1861b:37.

**MALE.**—Length 4.0 mm; wing 3.5 mm by 1.2 mm. Face ca. 3/4 as wide as high, not recessed, white pollinose; front not noticeably wider than face, not recessed, metallic greenish almost totally obscured by grayish white pollen. Palpus and proboscis black, former with numerous black setae. Antenna black; segment 2 only slightly produced above and on inner side, not longer above than below; segment 3 scarcely as long as high, with very short, blunt point under arista, arista from distal 1/4 of upper edge very near tip. Lower postocular setae white.

Thorax mostly metallic green obscured with yellowish gray pollen, rather distinct brown pollinose stripe dorsally between rows of dorso-centrals; acrostichals distinctly biseriate; scutellum with small hair on lateral margin; series of 5 or 6

small setae above fore coxa of which lowest ones are longer.

Legs dark, a little yellow at knees, coxae and femora metallic green with grayish pollen. Setae on anterior surfaces of coxae coarse, black. All femora with somewhat irregular series of anteroventral and posteroventral setae  $1/2$  to  $3/4$  as long as widths of femora, a stouter anteroventral seta at tip of femur III, 2 or 3 longer setae anterodorsally near tip of femur III. Tibia I with 2 or 3 anterodorsals, 3rd near  $1/2$  largest, 1 distinct posterodorsal near  $1/2$ , 2 small apicals above and below; tibia II with 2 large anterior bristles near  $1/5$  and  $3/5$ , small anterodorsal near  $2/5$ , 3 rather small posterodorsals near  $1/5$ ,  $2/5$ , and  $3/5$ , 1 distinct ventral near  $3/4$  and sometimes 1 smaller near  $2/5$ , usually 5 large apicals; tibia III with 7 anterodorsals of irregular lengths staggered in 2 rows of setae, 1st in series very small, 2nd, 4th, and 6th in more anterior row and slightly larger, 6 posterodorsals with 3rd and 5th large near  $2/5$  and  $3/5$ , 1 or 2 anteroventrals, the larger near  $3/4$ , 5 large apicals. Tarsi with last segment slightly broadened, pulvilli all enlarged and longer than 5th segments, fore tarsus slightly felted ventrally, basitarsus II with only a few ventral spicules; relative lengths of segments of tarsi from base as tarsus I, 14-6-4-3-4; tarsus II, 15-8-5-4-4; tarsus III, 12-10-7-4-4.

Wing grayish with yellowish brown veins; anal margin fully rounded. Vein 1 reaching near  $1/2$  length of wing; vein 3 distinctly curved backward near tip; last part of vein 4 not continuous at bend, ends apparently slightly overlapping. Crossvein  $1/4$  as long as last of vein 5. Calypter, setae and knob of halter whitish.

Abdomen metallic green dulled with gray pollen; hairs mostly short, hairs on sides and sternites longer, marginal setae 2 or 3 times as long as dorsal hairs. Hypopygium dark brown, bearing 4 stout bristles posteriorly.

**FEMALE.**—Face slightly higher than in male, with narrow clypeus visible; antenna as in male. Fore and middle coxae with less coarse setae anteriorly; femora without long setae or bristles below; tibia III with small anteroventrals; last segments of tarsi not broader, pulvilli not enlarged.

**COLLECTION DATA.**—Antigua: 1 ♂ Dutchman Bay 7 Jan 1965 W. W. Wirth. Jamaica: 5 ♂ and 5 ♀ Falmouth, bay shore 1 Mar 1969 W. W. Wirth.

**REMARKS.**—The species has been reported from Florida, the West Indies, and the Galápagos, but all specimens must be reexamined. Specimens of the present species have not yet been found in Dominica.

### *Asyndetus dominicensis*, new species

**MALE.**—Length 2.7 mm; wing 2.7 mm by 1.0 mm. Face slightly higher than wide; face and front not recessed at edges, covered with grayish white pollen. Palpus and proboscis black, former with several black setae. Antenna black; segment 2 somewhat produced above and on sides; segment 3 short and rounded, scarcely produced beyond insertion of arista. Lower postocular setae white.

Thorax with band of dark brown pollen between dorsocentral rows becoming slightly broader posteriorly, brown patch over wing base, mesoscutum and scutellum otherwise bluish white pollinose, pleura and coxae grayish pollinose; acrostichals distinctly biseriate; scutellum with small hair on lateral margin; 1 dark seta above fore coxa.

Legs dark, scarcely yellow at knees, femora metallic green; hairs and bristles of legs black. Fore and middle femora with rather slender hairs ventrally ca.  $1/2$  as long as widths of femora, ventral hairs at base of hind femur ca.  $1/3$  as long as width of femur, a few stouter setae near tips of median anterior and anteroventral surfaces of all femora. Tibia I with very small setae, 1 anterodorsal at  $1/3$ , 2 posterodorsals at  $1/2$  and  $3/4$ , 2 apicals posterodorsally and posteroventrally; tibia II with 3 rather large, nearly paired anterodorsals and posterodorsals near  $1/4$ ,  $1/2$ , and  $2/3$ , a rather large posteroventral near  $2/3$ , small posteroventral near  $1/2$ , 4 apicals; tibia III with large setae, 3 pairs of anterodorsals and posterodorsals near  $1/5$ ,  $2/5$ , and  $3/5$ , extra posterodorsal near  $4/5$ , no ventrals, 3 apicals dorsally and anteriorly. Tarsi with slightly broadened 5th segments, enlarged pulvilli on all tarsi, fore pulvilli largest, longer than 5th segment, hind pulvilli smallest, smaller than 5th segment; tarsus I slightly felted below, basitarsi II and III with spicules below; relative lengths of tarsal segments from base as tarsus I, 9-4-3-2-3; tarsus II, 10-6-4-2.5-3; tarsus III, 10-7-5-3-3.

Wing clear with brown veins; anal margin



prominent. Vein 1 reaching only near  $2/5$  length of wing; vein 3 bending slightly but distinctly backward at tip; last of vein 4 scarcely continuous with ca.  $45^\circ$  angle at bend. Crossvein slightly over  $1/4$  as long as last of vein 5. Calypter, setae and knob of halter whitish.

Abdomen metallic green dulled with gray pollen; hairs numerous, over 50 per  $1/4$  of tergite, rather slender and erect, especially long on sides and on sternites. Hypopygium black with small bristles on capsule.

**FEMALE.**—Face higher by width of narrow clypeus. Femora without longer setae below; tarsi without felt or distinct spicules below, pulvilli not enlarged.

**TYPE DATA.**—Holotype ♂ from Dominica: near Layou, south of river mouth, 27 Jan 1964 H. Robinson (USNM 72899). Allotype ♀ from Dominica: Cabrit Swamp, sea shore, 23 Feb 1965 W. W. Wirth.

**REMARKS.**—The new species is related to *Asyndetus fratellus* Aldrich of St. Vincent and Jamaica and *A. deficiens*, new species, of Mona Island. Still, the latter two are basically smaller, they have the abdominal hairs less numerous though they are somewhat longer on the sides, the mesoscutal band is present but more coppery and narrower, and the acrostichals are in a single staggered row or lacking. Available material also indicates that *A. fratellus* differs by the lack of larger ventrals and the presence of fewer dorsals on the middle tibia and by the presence of a right-angle bend in the last part of the fourth wing vein.

*Asyndetus currani* Van Duzee of Panama is probably also closely related, being about as large and having the longitudinal yellowish stripe on the mesoscutum. The Panamanian species differs by the yellow fore tibia and the moderately long, delicate ventral hairs on all the femora.

#### *Asyndetus deficiens*, new species

**MALE.**—Length 2.0 mm; wing 2.0 mm by 0.4 mm. Face slightly higher than wide, face and front not recessed at edges, covered with grayish white pollen. Palpus and proboscis black, former with several black setae. Antenna black; segment 2 somewhat produced above and on sides; segment 3 shorter than high, very blunt, scarcely produced

below insertion of arista, arista at distal  $1/4$  of upper edge. Lower postocular setae white.

Thorax with band of coppery brown pollen between rows of dorsocentrals becoming narrower posteriorly, brownish patch over wing base, mesoscutum and scutellum otherwise bluish white pollinose, pleura and coxae with thinner gray pollen; acrostichals lacking; scutellum with small hair on lateral margin; 2 small setae above fore coxa.

Legs dark, scarcely yellow at knees, femora metallic green; hairs and bristles of legs black. Femora with a few stouter long setae ventrally at tips, femur III with a pair of 3 long slender ventrals at base, ventral hairs of femora otherwise more erect but  $1/3$  or less as long as widths of femora. Tibia I with indistinct anterodorsal near  $1/4$ , 1 posterodorsal near  $1/2$ , 2 small apicals posterodorsally and posteroventrally; tibia II with 2 rather large anterodorsals near  $1/4$  and  $3/5$ , only 1 distinct posterodorsal near  $3/5$ , no ventrals, 4 stout apicals; tibia III with 2 large anterodorsals at  $1/5$  and  $3/5$ , 3 or 4 irregularly long posterodorsals at  $1/5$ ,  $2/5$ ,  $3/5$ , and  $4/5$ , the largest paired with anterodorsals, 2 larger apicals posterodorsally and anteriorly, 2 small apicals ventrally. Tarsi with slightly broadened 5th segments; enlarged pulvilli longest on fore tarsi, very short on hind tarsi; tarsus I slightly felted below, basitarsus II with a few spicules below; relative lengths of tarsal segments from base as tarsus I, 8-4-3-2-3; tarsus II, 9-5-3-2-2; tarsus III, 7-7-4-2-3.

Wing clear with brown veins; anal margin prominent. Vein 1 reaching only about  $2/5$  length of wing; vein 3 only slightly bent backward at tip; last of vein 4 not continuous (one specimen with faint trace at right-angle). Crossvein slightly less than  $1/4$  as long as last of vein 5. Calypter, setae and knob of halter whitish.

Abdomen metallic green with slight grayish pollen; hairs rather short, not numerous, less than 25 per  $1/4$  of tergite. Hypopygium black with 4 stout setae posteriorly.

**FEMALE.**—Face broader but longer by height of narrow clypeus. Thorax with 2 or 3 small acrostichals. Femora with ventral setae all shorter, some slightly longer near tips of femora; tibia I with 1 indistinct anterodorsal and 2 indistinct posterodorsals; tibia II with 2 small anterodorsals, 3 small posterodorsals, 4 apicals; tibia III differs by lack

of 1 or 2 smaller posterodorsals; all tarsi plain, without distinct felt, spicules, or enlarged pulvilli.

TYPE DATA.—Holotype ♂ from Puerto Rico: Mona Island, Uvero House, beach vegetation 20 Nov 1955 (USNM 72900). Allotype ♀ from Puerto Rico: Mona Island, Playa de Pajaro 22 Nov 1955. Collector unknown.

REMARKS.—The new species seems nearest to *Asyndetus fratellus* Aldrich but the latter has a distinct row of acrostichals and has longer ventral hairs on the femora. Also closely related is *A. exiguus* Van Duzee of Puerto Rico, which differs by the long, delicate black hairs below on the femora "scarcely as long as width of femora."

*Asyndetus pogonops*, new species

MALE.—Length 4.6 mm; wing 3.6 mm by 1.4 mm. Face and front dark metallic bluish green with slight grayish pollen, both slightly recessed near the edges; face square, as wide as high. Mouth much recessed between eyes; palpi and probosci black; palpi long and narrow, projecting forward from mouth, with long setae at tip, 2 very long setae directed inward and reaching under opposing palpus. Antenna black; segment 2 elongate, projecting far into segment 3 above and on sides; segment 3 twice as long as high, 1/2 overlapped by 2nd, tip blunt and oblique, broadly rounded into lower margin, arista from basal 1/3 of dorsal margin. Eyes unusually broad below, appearing rectangular from anterior view as result of long hairs on lower outside corners of surface. Lower postocular setae white.

Thorax metallic bluish green with slight gray pollen, pollen slightly denser on pleura; posterior acrostichals rather long; scutellum with very large hair on lateral margin; 3 small setae above fore coxa.

Legs dark except ventral surface of basal 2 segments of fore tarsus, coxae and femora metallic dark bluish green; hairs and bristles of legs dark. Fore coxa with mostly fine hairs anteriorly. All femora with rows of long slender setae below nearly as long as or slightly longer than widths of femora, a few stouter ventral setae distally. Tibia I with 1 very small anterodorsal near 1/4, without distinct ventrals or apicals; tibia II with small anterodorsal at 1/5, larger anterodorsals near 1/4

and 3/5, rather large posterodorsals at 1/5, 2/5, and 3/5, ventrals minute and indistinct, 4 distinct apicals; tibia III with large anterodorsals at 1/4 and 1/2, ca. 4 rather large posterodorsals near 1/5, 2/5, 3/5, and 4/5, no distinct ventrals, 4 distinct apicals. Tarsi with enlarged pulvilli; tarsus I basitarsus with series of 12–14 long slender setae anteroventrally, series of ca. 15 shorter, less erect setae posteroventrally, both series continued more weakly on segments 2 and 3, segments 2 and 3 and base of 4 slender, segment 5 nearly as broad as long and darker; basitarsus II with a few more erect, very short spicules ventrally; relative lengths of tarsal segments from base as tarsus I, 16–6–5–3–3; tarsus II, 21–8–6–3–3; tarsus III, 15–12–8–5–3.

Wing brownish before vein 3, clear behind, veins dark brown; anal margin not prominent, slightly rounded. Vein 1 reaching 4/9 of wing length; vein 3 curving only slightly backward near tip; last part of vein 4 faintly connected at bend, angle of bend 45°–60°. Crossvein over 1/4 as long as last of vein 5. Calypter, setae and knob of halter whitish.

Abdomen metallic dark green with reddish black bands at bases of segments, bands wider on posterior segments; hairs rather long, those on sides of tergite 2 as large as marginal bristles. Hypopygium black, bearing 4 stout bristles posteriorly.

FEMALE.—Face longer by width of clypeus; mouth not recessed between eyes, palpus broad with simple short subapical bristles; eyes not broad below, without longer hairs on lower outside surface. Femora without longer ventral setae except those near tips; tibia I with very small anterodorsal as in male, small posterodorsal near 3/5; tibia II with anterodorsals and apicals as in male, 2 large posterodorsals at 1/5 and 3/5, very small posteroventral near distal 1/3; tibia III with smaller posterodorsals. Tarsus I plain, lengths of segments as 13–5–4–2–3. Wing clear throughout, anal lobe prominent; vein 1 reaching only about 1/3 length of wing.

TYPE DATA.—Holotype ♂, allotype ♀, and 1 ♂ paratype from Puerto Rico: El Verde Field Station, km 19.6 Highway 186, elev. 1500 ft., 14–23 Mar 1969 R. Lavigne (USNM 72901).

REMARKS.—The new species is thoroughly dis-

tinctive with the modified eyes, palpi, fore tarsi, and wings, the latter with both narrowed base and brown color anteriorly. The short beards on the lower outside corners of the eyes seem a particularly unique feature. Other Dolichopodidae such as *Somillus* Brèthes (= *Ionthadophrys* Van Duzee) have longer hairs on the eyes but none of them show such restricted regional development.

### Genus *Chrysotus* Meigen

Small to rather medium sized, metallic green to brownish or yellow with black or sometimes pale bristles. Face usually narrow or obliterated by convergent or contiguous eyes; front broad, broader above. Pseudotracheae geminately sclerotized. Antenna with segment 1 bare above, truncate apically; segment 2 usually truncate at tip, sometimes produced slightly inside; segment 3 slightly to greatly enlarged, sometimes overarching segment 2 at base, arista slightly subapical or in apical notch. Postocular setae with single outer series.

Thorax with mesoscutum rather evenly rounded; acrostichals small, usually biseriata, sometimes uniseriate or lacking; usually 5 distinct

dorsocentrals; scutellum with 2 large bristles, usually a small seta on lateral margin; small seta above anterior coxa. Fore and middle coxae with numerous hairs anteriorly, larger hairs or bristles distally; middle and hind coxae with a distinct bristle nearer base. Femora without distinct preapicals. Pulvilli not usually enlarged.

Wings oblong-oval. Costa reaching tip of vein 4; vein 3 slightly to distinctly diverging from vein 2, usually straight and parallel with last part of vein 4; vein 4 ending in wing apex; crossvein shorter than last of vein 5; vein 6 represented by slight fold.

Abdomen about as long as thorax, slightly tapering; tergites with slightly longer marginal bristles. Hypopygium capping tip of preabdomen, without prominent setae at base, upper surface arched; appendages short. Female genitalia with crest of dornen above.

REMARKS.—The genus is widely distributed in the world with a particularly great diversity in the West Indies. Most of the species frequent low foliage in moist areas and they are common in sweepings. The 19 Dominican species can be distinguished by the following key.

### Key to the Species of *Chrysotus* in Dominica

1. Antennal segment 3 very broad, base projecting above to base of segment 2; segment 2 distinctly produced on inner side ..... 2  
Antennal segment 3 scarcely broader than segment 2; segment 2 not distinctly longer on inner side ..... 6
2. Antennal segment 3 of male not notched apically; male fore tarsus without enlarged pulvilli; female face strongly narrowed below, thickly pollinose; lower postocular setae often pale ..... 3  
Antennal segment 3 of male notched apically; male fore tarsus with slightly to distinctly enlarged pulvilli; female face slightly narrowed in middle, metallic blue with slight pollen ..... 4
3. Male hind basitarsus with large ventral seta; knob of halter yellow ..... *C. spinipes*  
Male hind basitarsus without large ventral seta; knob of halter dark in male ..... *C. integer*
4. Tibiae and most segments of tarsi pale yellow ..... *C. proximus*  
Legs wholly brown ..... 5
5. Male with knob of halter brown, hind tarsus with spur on segment 2, middle tibia with all 4 apicals large ..... *C. excisus*  
Male with knob of halter yellow, hind tarsus without spur on segment 2, middle tibia with only lower 2 apicals large ..... *C. pseudexcisus*
6. Male face distinct, eyes not contiguous; male abdominal tergites with distinct violet color; female face with brownish yellow pollen; hind tibia with only a few weak dorsals ..... 7  
Male face obliterated by contiguous eyes; male abdominal tergites not violet; face of female with whitish yellowish or brownish pollen; hind tibia sometimes with many distinct dorsals ..... 8
7. Legs and antennae mostly yellow; scutellum without lateral hair; mesoscutum of male metallic greenish ..... *C. tricolor*  
Legs with coxae and femora dark; scutellum with hair on lateral margin; mesoscutum of male violet to purple ..... *C. callichromus*

8. Fore coxae 1/2 or more yellow .....9  
Fore coxae wholly black .....13
9. Fore coxae with dark setae; tibia I with a small anterodorsal seta near base; male hind tibia and basitarsus with many long erect hairs covering anterior surface ..... *C. hirsutus*  
Fore coxae with only pale setae; tibia I without anterodorsal seta; male hind tibia and basitarsus not both covered with long erect hairs anteriorly .....10
10. Middle and hind femora 1/2 or more brown; male hind leg greatly modified with tibia very short and basitarsus elongate, the two segments together as long as normal tibia; male wing narrowed at base ..... *C. brevitibia*  
Femora almost wholly yellow; male hind leg with tibia and basitarsus of usual lengths; male wing with distinct anal lobe .....11
11. Pleura yellowish; scutellum without hair on lateral margin; antenna wholly brown; male antennal segment 3 much prolonged into slender tip ..... *C. minimus*  
Pleura brownish or green; scutellum with hair on lateral margin; antenna partly or wholly yellow; male antennal segment 3 shorter than high .....12
12. Male palpi short; antennal segment 3 brown; female face with straight sides; male hind tibia with only 2 distinct anterodorsals; male middle femur without series of long ventral setae, hind femur with 2 erect black setae ventrally near base ..... *C. mexicanus*  
Male palpi as long as head, narrow; antennal segment 3 of male yellow; female face narrowed below; male hind tibia with series of ca. 13 distinctive setae anterodorsally; male middle femur with series of long ventral setae, hind femur without erect black setae ventrally near base ..... *C. xiphostoma*
13. Male antennal segment 3 prolonged with deep apical cleft; male fore tibia with series of white hairs posterodorsally; knob of halter brown in both sexes ..... *C. acutus*  
Male antennal segment 3 not prolonged or cleft apically; male fore tibia without series of white hairs posterodorsally; knob of female halter yellow .....14
14. Wing veins 3 and 4 slightly divergent distally; male abdomen broadened nearly to tip, hypopygial lamellae prominent; knob of halter yellow in both sexes; palpus of male white .....15  
Wing veins 3 and 4 parallel to slightly convergent beyond crossvein; male abdomen rather gradually tapered, hypopygial lamellae very small; knob of halter dark in male; palpus of male black .....17
15. Scutellum without hair on lateral margin; hairs of fore coxa pale; male hind femur without longer setae along median anterior line; male abdomen curving downward; female hind tibia with 4-8 rather distinct posterodorsal setae ..... *C. subcaudatus*  
Scutellum with hair on lateral margin; hairs of fore coxa dark; male hind femur with few to many longer setae along median anterior line; male abdomen mostly straight; female hind tibia with 2 or 3 distinct posterodorsal setae .....16
16. Last part of vein 4 straight; hypopygium with narrowly oval, erect lamellae bearing only slender setae ..... *C. mediocaudatus*  
Last part of vein 4 curving slightly backward near tip; hypopygium with broad, angular, rather appressed lamellae bearing 2 or 3 stout apical bristles ..... *C. lamellicaudatus*
17. Middle tibia with small anterodorsal bristle in male, without posterodorsals; wing with crossvein 2/3 as long as last part of vein 5; male with legs wholly black; mesoscutum obscured by black pollen; face of female narrowed below ..... *C. niger*  
Middle tibia with a large anterodorsal bristle and usually with 2 small posterodorsals; wing with crossvein 1/2 as long as last part of vein 5; male with legs partly yellow or white; mesoscutum without black pollen; face of female with straight sides .....18
18. Femora mostly dark brown with dark setae; female with lower postocular setae pale ..... *C. pseudoniger*  
Femora half or more pale, with many white hairs in male; female with lower postocular setae mostly dark ..... *C. albihirtipes*

### *Chrysotus spinipes* Van Duzee

*Chrysotus spinipes* Van Duzee, 1924b:19.

MALE.—Length 1.6 mm; wing 1.8 mm by 0.6

mm. Eyes contiguous below; face obliterated except a metallic brownish pollinose triangle above and a very small triangle below; front shining metallic green. Palpus and proboscis brown,

former with a few short, black setae. Antenna dark brown; segments 1 and 2 short, small, 2nd produced slightly inside; segment 3 large, rather oval, base extending above nearly to base of segment 2, apical margin rounded and scarcely depressed beside arista; arista inserted just to outer side above tip, 1.5 times as long as face. Lower post-ocular setae rather pale.

Thorax with mesoscutum and scutellum metallic green with slight yellowish pollen toward sides, pleura brown with brownish pollen; acrostichals biseriate; 6 pairs of dorsocentrals; scutellum with rather large seta on lateral margin; black seta above fore coxa.

Legs with coxae, femora, and last segments of tarsi brown; tibiae and basal segments of tarsi yellow, tarsi becoming more brownish yellow distally. Hairs and bristles dark. Fore coxa with short brown hairs anteriorly, with longer black setae toward outer edge and tip. Femora with usual longer ventral setae near tips. Tibia I with 1 very small anterodorsal near 1/4, 2 or 3 very small apicals; tibia II with 1 rather large anterodorsal near 1/3 immediately preceded by very small bristle, 2nd very small anterodorsal near 3/5, 2 or 3 slender indistinct ventrals, 2 rather large apicals ventrally and anteroventrally; tibia III usually with 4 small anterodorsals along basal 3/5, 2nd of series as long as width of tibia, small posterodorsals near 1/5, 2/5, and 4/5, 1 rather large posterodorsal near 3/5, 2 or 3 slender indistinct ventrals, 4 distinct apicals. Tarsus I with pulvilli very slightly enlarged; tarsus III with a large bristle ventrally near middle of basitarsus; relative lengths of tarsal segments from base as tarsus I, 14-7-5-4-3.5; tarsus II, 16-6-5-4-3; tarsus III, 10-10-7-4-3.5.

Wing elliptical, more oblong toward base; clear, veins brown. Vein 1 reaching 3/8 length of wing; vein 2 very slightly curving; vein 3 and last of vein 4 slightly curving backward and nearly parallel. Crossvein ca. 1/2 as long as last of vein 5. Calypter and setae brown; knob of halter yellow.

Abdomen gradually tapering, metallic dark reddish green; setae brown, marginal setae of tergites about twice as long as hairs, tergite 6 rather broad with numerous setae. Hypopygium rather small, brown, with only very short erect setae posteriorly; lamellae very small, brownish with many short hairs.

FEMALE.—Unknown.

COLLECTION DATA.—Dominica: 1 ♂ Wooten Waven, 1300' elev. 7 Oct 1964 P. J. Spangler; 2 ♂ Clarke Hall, light trap 21-28 Feb, 1-10 Mar 1965 W. W. Wirth.

REMARKS.—The species previously has been known only from Cuba.

### *Chrysotus integer*, new species

MALE.—Length 2.0 mm; wing 2.0 mm by 0.6 mm. Eyes essentially contiguous below; face obliterated except brown pollinose triangle above that continues in very fine line in lower 1/2 of face; front bluish green to violet, dulled with slight brownish pollen. Palpus and proboscis dark brown, former usually with 2 black apical setae. Antenna dark brown; segments 1 and 2 short, small, 2nd produced slightly inside; segment 3 large, rather rounded, base extending above nearly to base of segment 2, entire to very slightly pointed on broadly rounded tip; arista inserted just to outer side of tip, 1.5 times as long as face. Lower post-ocular setae white to brownish.

Thorax with mesoscutum and scutellum bright shining metallic green; pleura more brown with green reflections, obscured by brownish pollen; acrostichals biseriate; 6 pairs of dorsocentrals; scutellum with rather large seta on lateral margin; black seta above fore coxa.

Legs brown; coxae, femora, and 5th segments of tarsi dark brown, tibiae and most of tarsi yellowish brown; hairs and bristles brown to black. Fore coxa with short hairs anteriorly, longer setae toward margin and tip. Femora with the usual longer ventral setae near tips. Tibia I with 1 very small anterodorsal near 1/5, slightly larger apical posterodorsally; tibia II with 1 large anterodorsal near 1/4 immediately preceded by very small bristle, often very indistinct posterodorsal near 1/2, 2 or 3 indistinct ventrals, 4 apicals with only lower 2 very distinct; tibia III with 1-4 anterodorsals of which only 1 near 1/4 as long as width of tibia, usually 5 posterodorsals near 1/5, 2/5, 3/5, 4/5, and tip, only 2nd, 3rd, and last longer than width of tibia, 3 other short apicals. Tarsus I with pulvilli not enlarged; relative lengths of tarsal segments from base as tarsus I, 17-8-5-4-3; tarsus II, 19-8-6-4-3; tarsus III, 12-10-5-4-3.

Wing elliptical; clear with brown veins. Vein 1



reaching  $2/5$  length of wing; veins 2, 3, and last of 4 curving very slightly backward, 3 and last of 4 parallel. Crossvein ca.  $2/3$  as long as last of vein 5. Calypter and setae black; knob of halter black.

Abdomen gradually tapering, metallic dark green with coppery reflections; setae brown; marginal setae of tergites about twice as long as hairs, tergite 6 rather broad with numerous setae. Hypopygium rather small, brown, with some short erect setae posteriorly; lamellae small, rounded, pale brownish with numerous short, pale brownish hairs; armature short, narrow, dark brown.

**FEMALE.**—Length up to 2.4 mm. Face twice as long as upper width, narrowed to ca.  $1/2$  at clypeus, covered with thick dark gray pollen; clypeus forming lower  $2/5$  of face, slightly wider and with straight margin below; palpus broader with more setae; antennal segment 3 slightly shorter than high with a slight apical notch at arista. Knob of halter yellow.

**TYPE DATA.**—Holotype ♂ and 1 ♂ paratype from Dominica: Clarke Hall 11–20 Jan 1965 W. W. Wirth (USNM 72902). Allotype ♀ and 1 ♂ paratype from Dominica: Clarke Hall 12–17 Nov 1964 P. J. Spangler. Additional paratypes from Dominica: 1 ♂ Antrim, 1000' 18 Mar 1956 J. F. G. Clarke; 1 ♂ and 1 ♀ 4 Feb 1964 D. F. Bray, 3 ♂ 17–20 Feb 1964 H. Robinson, 1 ♀ 3–8 Oct 1964 P. J. Spangler, 1 ♂ malaise trap 21–31 Jan, 1 ♂ 11–20 Feb 1965 W. W. Wirth, 4 ♂ 1–9 June 1966 G. Steyskal, 1 ♀ 10 Oct 1966 A. B. Gurney, all Clarke Hall; 1 ♀ near Layou 12 Feb 1964 H. Robinson; 1 ♂ Layou 29 May 1966 G. Steyskal. Paratype from Grenada: 1 ♂ H. H. Smith (Melander collection).

**REMARKS.**—The new species is close to *Chrysotus spinipes* Van Duzee but lacks the ventral seta of the hind basitarsus. The new species may also be close to *C. guyanensis* Parent which was described with "Antennes noires, article 3 grand, arrondi, soie courtement pubescente." Parent's species differs by the yellow halteres.

### *Chrysotus proximus* Aldrich

*Chrysotus proximus* Aldrich, 1896:326.

**MALE.**—Length 2.2 mm; wing 2.2 mm by 0.9 mm. Eyes broadly contiguous below; face obliterated except small brownish pollinose triangle above;

front shining metallic green with slight brownish pollen at base. Palpus and proboscis dark brown, former with only tip exerted with 1 or 2 small black setae. Antenna dark brown; segments 1 and 2 short, small, 2nd produced slightly inside; segment 3 large, ovate, as high as long, base extending above to base of segment 2, sharply cleft at tip; arista inserted in apical notch, 1.5 times as long as facial area. Lower postocular setae brownish, some rather pale.

Thorax with mesoscutum and scutellum shining metallic green with very slight brownish pollen; pleura more brownish with green reflections, obscured by pale brownish pollen; acrostichals biserrate; 6 pairs of distinct dorsocentrals, anterior pair somewhat smaller; scutellum with large seta on lateral margin; dark seta above fore coxa.

Legs with coxae, femora, and 5th tarsal segments brown; trochanters, tips of fore and hind femora, tibiae, and most tarsal segments pale yellow; tarsi more brownish yellow before 5th segments. Hairs of legs brown. Fore coxa with small hairs anteriorly and longer setae at tip. Femora with usual longer setae near tips, a few long setae posteriorly near base of hind femur. Tibia I with 1 very small anterodorsal near  $1/4$ , 2 or 3 small apicals; tibia II with 1 large anterodorsal near  $1/4$ , very small anterodorsals and posterodorsals near  $1/2$ , ca. 2 indistinct ventrals, 4 apicals with only 1 or 2 below large; tibia III with ca. 4 anterodorsals and posterodorsals near  $1/5$ ,  $2/5$ ,  $3/5$ , and  $4/5$ , 1st and 3rd anterodorsals and 2nd and 3rd posterodorsals somewhat larger, 4 rather small apicals. Tarsus I with pulvilli scarcely enlarged; relative lengths of tarsal segments from base of tarsus I, 20–10–7–4–4; tarsus II, 20–10–6–4–3; tarsus III, 12–10–5–4–3.

Wing broadly elliptical; clear with brown veins. Vein 1 reaching  $3/8$  length of wing; vein 2 essentially straight; vein 3 nearly parallel with last of vein 4 but curving slightly more in distal part. Crossvein  $3/5$  to  $2/3$  as long as last of vein 5. Calypter and setae brown; knob of halter yellow.

Abdomen gradually tapering, greenish with mostly coppery reflections; setae brown; marginal setae of tergites up to 2–3 times as long as hairs; tergite 6 broad with numerous setae. Hypopygium rather small, brown, with a few longer erect setae posteriorly; lamellae small, oval, brownish with numerous short brownish hairs.

**FEMALE.**—Length up to 2.8 mm. Face twice as

high as upper width, slightly narrowed in middle, bluish dulled with slight grayish pollen; clypeus forming lower  $3/8$  of face, about as wide as high, wider and projecting forward below; front blue; palpus broader with more setae; antennal segment 3 similar to male but only 1.5 times as high as segment 2 and only  $2/3$  as long as high. Hind femur without longer posterior setae near base; pulvilli not enlarged. Crossvein of wing usually at least  $2/3$  as long as last of vein 5.

**COLLECTION DATA.**—Dominica: 2 ♂ and 2 ♀ 25 Jan–20 Feb 1964 H. Robinson, 2 ♀ malaise trap 8–10 Jan 1965 W. W. Wirth, 1 ♂ 2 June 1966 G. Steyskal, all Clarke Hall; 2 ♀ Rosalie River 28 Jan, 2 ♂ North Deux Dleau River 28 Jan 1964 H. Robinson; 5 ♂ and 5 ♀ 6–8 Feb 1964 H. Robinson, 2 ♂ 2 Feb, 2 ♂ 20 Feb 1965 W. W. Wirth, all South Chiltern Estate; 3 ♀ Freshwater Lake 21 Feb, 2 ♂ Boeri Lake trail 22 Feb 1 ♂ Syndicate Estate 6 Mar 1964 H. Robinson; 1 ♀ Boeri Lake 22 Feb 1964 D. F. Bray; 1 ♀ Grande Savane 1 Feb, 1 ♂ 3 Feb, 4 ♂ Fond Figue River 9–12 Mar, 1 ♀ Trafalgar Falls 6 Mar, 1 ♂ Pont Casse, 1.7 miles east 10 Mar, 2 ♀ Hillsborough Estate 15 Mar 1965, all W. W. Wirth; 1 ♂ Fond Figue River, 400' 12 Apr, 2 ♂ Tareau Cliffs, La Fanchette 13 Apr 1966 R. J. Gagné.

**REMARKS.**—The species seems widely distributed in the Lesser Antilles.

### *Chrysotus excisus* Aldrich

*Chrysotus excisus* Aldrich, 1896:325.

**MALE.**—Length 2.4 mm; wing 2.4 mm by 0.8 mm. Eyes contiguous below; face obliterated except broad green triangle above which is obscured by brownish gray pollen, sometimes very small triangle below; front metallic green dulled by slight grayish pollen. Palpus black with a few black setae; proboscis brown. Antenna dark brown; segments 1 and 2 short, small, 2nd produced slightly inside; segment 3 large, rather triangular-ovate to crescent-shaped, slightly shorter than high, base extending above to base of segment 2, cleft at tip; arista inserted in apical notch, 1.5 times as long as facial area. Lower postocular setae black.

Thorax with mesoscutum and scutellum shining metallic dark green with very slight brownish pollen; pleura more brown with green reflections,

obscured by brown pollen; acrostichals biseriate; 6 pairs of dorsocentrals, anterior pair somewhat smaller; scutellum with large seta on lateral margin; black seta above fore coxa.

Legs dark brown with brown or black setae. Fore coxa with small hairs anteriorly, larger setae distally. Femora with usual longer setae distally; femora II and III with series of somewhat longer, more erect setae posteroventrally, those of femur III with longer setae of series nearer base. Tibia I with very small anterodorsal near  $1/4$  and 1 larger posterodorsal at apex, 1 or 2 other smaller apicals; tibia II with 1 large anterodorsal near  $1/4$  preceded by very small seta, 1 smaller anterodorsal near  $1/2$ , small ventral near  $3/5$  and sometimes 2nd smaller near  $2/5$ , 4 very large apicals; tibia III with 2–5 anterodorsals, only 2 near  $1/6$  and  $3/5$  distinct, ca. 4 small posterodorsals, 2 or 3 near  $2/5$ ,  $1/2$ , and  $3/5$  rather distinct, 4 short apicals. Tarsus I with pulvilli scarcely enlarged; tarsus III with segment 2 prolonged posteriorly in short spur overlapping base of segment 3; relative lengths of tarsal segments from base as tarsus I, 20–9–7–6–4; tarsus II, 20–8–7–5–4; tarsus III, 12–6 (9)–10–7–5.

Wing elliptical; clear with brown veins. Vein 1 reaching  $3/8$  length of wing; vein 2 straight; vein 3 and last of vein 4 parallel, curving slightly backward. Crossvein  $1/2$  as long as last of vein 5. Calyp-ter and setae black; knob of halter brown.

Abdomen gradually tapering, dark greenish black; setae black; marginal setae of tergites up to 2–3 times as long as hairs, tergite 6 rather broad with numerous setae. Hypopygium rather small, brown, with a few longer erect setae posteriorly; lamellae small, narrowly triangular, brownish with numerous brownish marginal hairs; armatures narrow, yellowish brown.

**FEMALE.**—Length up to 3.2 mm. Face twice as high as upper width, slightly narrowed in middle, bluish, dulled with slight grayish pollen; clypeus forming lower  $3/8$  of face, about as wide as high, wide and projecting forward below; front blue; palpus broader with more setae; antennal segment 3 similar to male but only 1.5 times as high as segment 2 and only  $2/3$  as long as high, notch very small. Hind femur without long posteroventrals; pulvilli of fore tarsus not enlarged; hind tarsus without spur on segment 2, lengths of segments as 18–15–9–7–6. Crossvein of wing nearer  $3/5$  as long as last of vein 5. Knob of halter yellow.

**COLLECTION DATA.**—Dominica: 7 ♂ and 3 ♀ 23 Jan–24 Feb 1964 H. Robinson, 1 ♂ 3–8 Oct, 1 ♀ 11–16 Dec 1964 P. J. Spangler, 1 ♀ 8–10 Jan, 3 ♂ and 2 ♀ malaise trap 11–20 Jan, 2 ♂ cocoa trail 18 Jan, 1 ♀ 1–10 Feb, 7 ♂ cocoa trail 16 Feb, 3 ♂ and 2 ♀ 11–31 Mar, 1 ♀ light trap 21–31 Mar 1965 W. W. Wirth, 14 ♂ and 2 ♀ 13 Apr–8 May 1966 R. J. Gagné, 8 ♂ 11 May–6 June 1966 G. Steyskal, all Clarke Hall; 1 ♂ Clarke Hall, Manets Gutter 5 Mar 1965 W. W. Wirth; 1 ♂ and 1 ♀ Rosalie River 28 Jan, 1 ♂ near Belfast 31 Jan, 6 ♂ and 3 ♀ South Chiltern Estate 7–8 Feb, 3 ♂ La Ronde River 15 Feb 1964, all H. Robinson; 1 ♀ 22 Nov 1964 P. J. Spangler, 1 ♂ 8–13 Oct 1966 A. B. Gurney, both Pont Casse; 1 ♂ Pont Casse 1.5 miles north 12 Feb 1965 W. W. Wirth; 4 ♂ Hodges River mouth, swamp forest 27 Feb 1965 W. W. Wirth.

**REMARKS.**—The species seems widely distributed in the Neotropical region, with specimens seen from the Lesser Antilles and from Mexico. The original concept of the species as selected by Aldrich from the St. Vincent collections of H. H. Smith was a mixture of this and the following species. Both the series at the National Museum of Natural History and the British Museum prove to be mixed. Through the kindness of Kenneth G. V. Smith, part of the latter series has been seen and a lectotype has been chosen conforming to the present concept of the species.

### *Chrysotus pseudexcisus*, new species

**MALE.**—Length 2.2 mm; wing 2.2 mm by 0.9 mm. Eyes contiguous below; face obliterated except brown pollinose triangle above and very small triangle below; front blue dulled with slight brown pollen. Palpus and proboscis dark brown, former with a few black setae. Antenna dark brown; segments 1 and 2 short, small, 2nd produced slightly inside; segment 3 large, rather ovate to crescent-shaped, base extending above to base of segment 2, cleft at tip; arista inserted in apical cleft, 1.5 times as long as face. Lower postocular setae brown.

Thorax with mesoscutum and scutellum shining metallic dark green or bluish, with slight brownish pollen; pleura more brown with green reflections, obscured by brown pollen; acrostichals biseriate; 6 pairs of dorsocentrals, anterior pair slightly smaller; scutellum with large seta on lateral margin; black seta above fore coxa.

Legs brown, tibiae and basal 4 segments of tarsi more yellowish brown; hairs brown or black. Fore coxa with small hairs anteriorly and large setae near tip. Femora with usual longer setae near tips; middle femur with somewhat longer, more erect hairs below anteriorly and posteriorly; femur III with a few longer erect setae posteroventrally near base. Tibia I with very small anterodorsal near 1/5, small apical posterodorsally; tibia II with large anterodorsal near 1/4, small posteroventral near 2/3, 2 small apicals above, 2 large apicals ventrally; tibia III with 1–3 distinct anterodorsals, only that near base as long as width of tibia, 4 posterodorsals near 1/6, 2/3, 1/2, and 2/3, last 2 or 3 as long as width of tibia, 3 or 4 distinct apicals. Tarsus I with pulvilli scarcely enlarged; relative lengths of tarsal segments from base as tarsus I, 20–10–8–6–4; tarsus II, 22–10–7–5–4; tarsus III, 12–12–8–5–4.

Wing broadly elliptical; clear with yellowish brown veins. Vein 1 reaching 3/8 length of wing; vein 2 straight; vein 3 and last of vein 4 scarcely curved, nearly parallel. Crossvein slightly over 1/2 as long as last of vein 5. Calypter and setae black; knob of halter dark yellow.

Abdomen gradually tapering, metallic dark green with coppery reflections; setae brown; marginal setae of tergites up to 2–3 times as long as hairs, tergite 6 rather broad with numerous setae. Hypopygium rather small, brown, with some longer erect setae posteriorly; lamellae small, pale brownish, narrowly oval with short brownish hairs and 1 or 2 longer black apical setae; armature rather broad, dark brown.

**FEMALE.**—Unknown.

**TYPE DATA.**—Holotype ♂, allotype ♀, and 2 ♂ paratypes from Dominica: Fond Figs River, rain forest 3 Feb 1965 W. W. Wirth (USNM 72903). Additional paratypes from Dominica: 1 ♂ Rosalie River 28 Jan, 1 ♂ near Belfast 31 Jan 1964 H. Robinson; 2 ♂ Fond Figs River 16 Mar 1964 D. F. Bray; 1 ♀ South Chiltern Estate 2 Feb 1965 W. W. Wirth; 1 ♂ trail, 1 mile north junc. rds. to Rosalie and Castle Bruce, 1300' 29 Mar, 1 ♂ Fond Figs River, 400' 12 Apr 1966 R. J. Gagné. Paratypes from St. Vincent: 1 ♂ and 1 ♀ H. H. Smith (British Museum).

**REMARKS.**—The new species is closely related to *Chrysotus excisus*, and the two were mixed in the original concept of the latter species. The new species is distinguished most easily by the lack of a

spur on the second segment of the male hind tarsus and by the yellow knob of the male halter.

*Chrysotus tricolor*, new species

MALE.—Length 2.0 mm; wing 2.0 mm by 0.6 mm. Eyes not contiguous below; face very narrow in lower 1/2, face and front light green dulled with grayish yellow pollen. Palpus ca. 1/3 as long as face, ovate, white pollinose with a few pale brown setae; proboscis brownish yellow. Antenna mostly yellow; segments 1 and 2 short, small, 2nd not produced; segment 3 more brownish distally, small, about as high as long, broadly rounded to truncate apically; arista essentially midapical, 1.5 times as long as face. Lower postocular setae white.

Thorax light metallic green, mesoscutum and scutellum dulled with yellowish pollen, grayish pollen on pleura; setae brown; acrostichals biseriate; 5 pairs of distinct dorsocentrals; scutellum without small seta on lateral margin; small dark seta above fore coxa.

Legs mostly yellow with outer surface of middle coxa, base of hind coxa and last segment of tarsi brownish; hairs and bristles brown to black. Fore coxa with numerous short fine hairs anteriorly, those in apical comb paler and slightly longer. Femora with usual longer ventral setae near tips. Tibia I without distinctive setae; tibia II with small antero-dorsal near 1/5, 3 very small apicals anteriorly and ventrally; tibia III with small dorsal near 3/5, slightly larger apical dorsally. Tarsi with pulvilli not enlarged; relative lengths of tarsal segments from base as tarsus I, 8-4-3-2-2; tarsus II, 11-5-3-2-2; tarsus III, 7-5-3-2-2.

Wing oblong-elliptical; clear with brownish veins. Vein 1 reaching 1/3 length of wing; vein 2 straight; vein 3 and last of vein 4 curving slightly backward, parallel. Crossvein ca. 1/2 as long as last of vein 5. Calypter with setae pale; knob of halter yellow.

Abdomen gradually tapering; tergites metallic reddish violet, sternites brown; setae black; marginal setae of tergites only slightly longer, tergite 6 rather broad with numerous setae. Hypopygium very small, brown, with only few very short setae; appendages brown.

FEMALE.—Face twice as high as upper width, slightly narrowed in middle and lower parts, dulled with slight yellowish pollen; clypeus forming lower

1/3 of face, slightly wider than high; palpus brown; antennal segment 3 more narrowly truncate apically. Crossvein of wing nearer 3/5 as long as last of vein 5.

TYPE DATA.—Holotype ♂ and allotype ♀ from Dominica: Pont Casse 1.7 miles east, light trap 24 Mar 1965 W. W. Wirth (USNM 72904). Paratype from Dominica: 1 ♂ Pont Casse 0.2 mile east 10 Apr 1966 R. J. Gagné.

REMARKS.—The new species is of the group with eyes not contiguous in the male and with tergites of the male abdomen prominently metallic violet. Distinctive features of the species include the mostly yellow legs and antennae, the green thorax, and the lack of any setae on the lateral margin of the scutellum.

*Chrysotus callichromus*, new species

MALE.—Length 2.2 mm; wing 2.0 mm by 0.8 mm. Eyes not contiguous below; face twice as high as upper width, narrower below, narrowest in lower 1/4; face and front greenish obscured by brownish yellow pollen. Palpus ca. 1/3 as long as face, ovate, black with a few black setae; proboscis black. Antenna black; segments 1 and 2 short, small, 2nd not produced; segment 3 ca. 1/2 as long as high, appearing small triangular with distal margin receding above; arista just above point near lower margin, 1.5 times as long as face. Lower postocular setae white.

Thorax with mesoscutum and scutellum distinctly violet with slight brownish pollen, pleura more bluish green with slight grayish pollen; setae black; acrostichals biseriate; 5 pairs of distinct dorsocentrals; scutellum with small seta on lateral margin; small, pale brownish seta above fore coxa.

Legs with coxae and femora dark metallic green, tarsi brownish yellow from tips of basitarsi, last segments brown, legs otherwise yellow; most hairs and bristles brown or black. Fore coxa with numerous short pale hairs anteriorly, those near tip scarcely longer. Femora with usual longer ventral setae near tips. Tibia I without distinctive setae; tibia II without distinctive setae except 2 large apicals ventrally and anteroventrally; tibia III with very small anterodorsal near 1/4, smaller posterodorsals near 1/5, 2/5, and 3/5, very small apicals posterodorsally and anteroventrally. Tarsi with

last segment slightly broadened, fore pulvilli  $1/2$  as large as last segment, middle and hind pulvilli only slightly enlarged; relative lengths of tarsal segments from base as tarsus I, 10-4-3-2-3; tarsus II, 11-5-3-2-2; tarsus III, 7-5-3-2-3.

Wing oblong-elliptical; clear with brown veins. Costa slightly more thickened than usual between tips of veins 1 and 3; vein 1 reaching  $1/3$  length of wing; vein 2 straight; vein 3 and last of vein 4 curving slightly backward, nearly parallel with last of vein 4 curving slightly more near tip. Cross-vein ca.  $3/5$  as long as last of vein 5. Calypter with black setae; knob of halter brownish.

Abdomen gradually tapering; tergites dark metallic violet, lateral margins and sternites more bluish green; setae black; marginal setae of tergites only slightly longer, tergite 6 rather broad with numerous setae. Hypopygium small, brown, with only few very short setae; appendages dark brown.

**FEMALE.**—Face scarcely twice as high as upper width, not narrower below, metallic bluish green obscured by brownish yellow pollen; clypeus forming ca. lower  $2/5$  of face, about as high as wide; antennal segment 3 not as high and more truncate than in male, without point below. Tibia II with distinct anterodorsal near  $1/4$ ; tibia III with small posterodorsals near only  $1/5$  and  $1/2$ ; last segments of tarsi not broader, pulvilli not enlarged.

**TYPE DATA.**—Holotype ♂, allotype ♀, and 6 ♂ paratypes from Dominica: Clarke Hall, light trap, 21-31 Jan, 21-28 Feb, 1-10, 21-31 Mar 1965, W. W. Wirth (USNM 72905). Paratype ♂ from Dominica: Clarke Hall, malaise trap, 11-20 Feb 1965, W. W. Wirth.

**REMARKS.**—The new species is of the group with eyes not contiguous in the male and with tergites of the male abdomen prominently metallic violet. The color of the legs and the shape of the third antennal segment of the male indicate close relationship to *Chrysotus morrisoni* Van Duzee of the Virgin Islands and Puerto Rico, but the new species differs by the dark halteres and by the dark violet mesoscutum and scutellum of the male.

### *Chrysotus hirsutus* Aldrich

*Chrysotus hirsutus* Aldrich, 1896:328.

**MALE.**—Length 2.0 mm; wing 2.0 by 0.7 mm. Eyes broadly contiguous below; face obliterated

except narrow metallic green triangle above obscured by gray pollen; front metallic bluish with slight grayish pollen. Palpus exerted, oval, yellow with distinct black apical bristle. Antenna brown; segments 1 and 2 short; segment 3 a truncated triangle, 1.5 times as high as long; arista inserted in slight apical sinus, 1.5 times as long as face. Lower  $1/2$  of postocular series of setae white.

Thorax with mesoscutum and scutellum shining metallic green with slight yellowish pollen; pleura brown; acrostichals biseriate; 5 pairs of distinct dorsocentrals; scutellum with lateral hair; humerals very strongly convergent; small brown seta above fore coxa.

Legs mostly yellow with base of fore coxa, all but tips of middle and hind coxae, distal  $1/3$  to  $1/2$  of hind femur, and 5th segments of tarsi brown. Hairs and bristles brown, hairs of fore tibia and tarsi and of anterior or ventral surfaces of middle femur and tibia with pale reflections. Setae of fore coxa rather coarse, not longer distally. Fore femur with very distinct rows of erect, close-set, longer black setae anteroventrally and posteroventrally along whole length; femur II with series of longer hairs anteroventrally and a longer black seta anteroventrally and posteroventrally near tip; femur III with 4 large black setae anteroventrally near tip, series of longer setae posteroventrally along basal  $1/2$ . Tibia I with usually only 1 small anterodorsal near  $1/3$ , small apicals; tibia II with 2 large anterodorsals at  $1/3$  and  $2/3$ , a very small posterodorsal just before  $1/2$ , 4 distinct apicals, only the 2 below large; tibia III with anterior surface covered with numerous erect curved hairs nearly twice as long as width of tibia, 3 or more stiff black anterodorsals with only 1 near  $1/3$  longer than nearby hairs, ca. 4 longer posterodorsals with only last 2 at  $3/4$  and tip rather long. Tarsus I with pulvilli as long as 5th segment; tarsus III short compared to tibia, with segments 1 and 2 bearing hairs anteriorly as on tibia gradually decreasing in length on more distal parts, some hairs usually retrorse, basitarsus with shorter erect hairs covering ventral surface; relative lengths of tarsal segments from base as tarsus I, 15-6-5-3-3; tarsus II, 15-7-6-4-3; tarsus III, 8-5-3-2-3.

Wing oblong-elliptical; clear with brown veins. Vein 1 reaching  $2/5$  length of wing; vein 2 essentially straight; vein 3 and last of vein 4 nearly



straight, parallel. Crossvein ca.  $2/5$  as long as last of vein 5. Calypter yellow, setae pale brownish; halter yellow.

Abdomen slightly tapering, metallic green with some coppery reflections; hairs and bristles brown, marginal setae of tergites ca. twice as long as hairs, tergite 6 broad with numerous hairs. Hypopygium rather large, extending  $2/5$  under abdomen, brown, with 2 or more distinct setae borne posteriorly.

**FEMALE.**—Face ca. twice as high as wide with nearly straight sides, bluish, covered with grayish white pollen; clypeus forming lower  $1/3$  of face. Palpus broad, brownish yellow with scattered brownish setae. Fore coxa and hind femur usually more broadly yellow; femora without series of longer, more erect ventral setae; hind femur with 2 or 3 distal black anteroventrals which are not as long as in male; tibia III with large anterodorsals near  $1/5$ ,  $1/2$ , and tip, small anterodorsals near  $2/5$  and sometimes  $3/4$ , very large posterodorsals near  $2/5$ ,  $2/3$ , and tip, smaller near  $1/5$  and  $4/5$ , 2 smaller ventrals below; lengths of segments of tarsus III as 12–8–6–4–4.

**COLLECTION DATA.**—Dominica: 4 ♂ and 3 ♀ near Layou 27–30 Jan, 1 ♂ North Deux Dleau River 28 Jan, 3 ♂ Rosalie River 28 Jan–14 Feb 1964 H. Robinson; 7 ♂ and 4 ♀ 29 Jan–20 Feb 1964 H. Robinson, 1 ♂ 12–17 Nov 1964 P. J. Spangler, 9 ♂ and 3 ♀ 8 Jan–10 Mar, 1 ♂ and 1 ♀ cocoa trail 16 Jan 1965 W. W. Wirth, 2 ♂ and 1 ♀ 28 Mar–6 Apr 1966 R. J. Gagné, 6 ♂ 11 May–8 June 1966 G. Steyskal, all Clarke Hall; 1 ♂ Clarke Hall, Manets Gutter 9 Sept 1965 D. L. Jackson; 1 ♂ Deux Branches, Pagua River 3 Feb, 1 ♂ and 4 ♀ Boeri Lake trail 22 Feb, 2 ♂ Dleau Morne Laurent 1–21 Mar, 1 ♂ Fond Figue River 17 Mar 1964 all H. Robinson; 1 ♂ Layou River mouth 9 Jan, 6 ♂ Macoucheri River 14 Jan–15 Mar, 6 ♂ Grande Savane 30 Jan–1 Feb, 1 ♀ Pont Casse 1.5 miles north 12 Feb, 7 ♂ and 2 ♀ some in light trap 23 Feb, 5 ♂ and 4 ♀ Cabrit Swamp 22–25 Mar, 2 ♂ Woodford Hill 27 Feb 1965 all W. W. Wirth; 1 ♀ South Chiltern Estate 18–19 Aug 1965 D. L. Jackson; 1 ♀ Batali River near Colihaut 5 May 1966 R. J. Gagné; 3 ♂ and 4 ♀ near Sylvania 25 Oct, 1 ♀ Coulibistri 30 Oct 1966 A. B. Gurney.

**REMARKS.**—The species is known from the West Indies, Central America, and Peru.

### *Chrysotus brevitibia* Van Duzee

*Chrysotus brevitibia* Van Duzee, 1927b:1.

*Chrysotus miritibia* Parent, 1933:245.

**MALE.**—Length 1.4 mm; wing 1.3 mm by 0.5 mm. Eyes broadly contiguous below; face obliterated except narrow, brownish pollinose triangle above; front metallic green with slight yellowish pollen. Palpus small, oval, white with small pale apical seta, usually only tip showing; proboscis brown. Antenna brown; segments 1 and 2 short; segment 3 as long as basal 2 combined, broadly triangular with lower edge straight and upper edge oblique, slightly longer than wide, sharply pointed, bearing rather long hairs; arista inserted just above point, about as long as facial area. Lower  $1/2$  to  $2/3$  of postocular series white.

Thorax with mesoscutum and scutellum metallic yellowish green; pleura greenish obscured by thick grayish pollen; acrostichals biseriate; 5 pairs of distinct dorsocentrals; scutellum with small lateral hair; humerals very strongly convergent; small brown seta above fore coxa.

Legs with extreme base of fore coxa and all but tips of middle and hind coxae brown with grayish pollen; upper edge of fore femur, all but base and tip of middle femur, distal  $2/3$  of hind femur, all of hind tibia, and tarsi from tips of basitarsi brown; legs otherwise yellow. Bristles and most hairs black, hairs of fore coxa and some ventral hairs on femora pale. Distal hairs of fore coxa slightly longer. Fore femur with prominent posteroventral series of erect setae nearly as long as width of femur, distal 3 setae of series black, similar smaller series anteroventrally along basal  $2/3$ ; femur II with anteroventral and posteroventral series of longer erect hairs with those near base pale and nearly as long as width of femur, posteroventrals near tip more prominent with 2 longer than others and black; femur III with some long posteroventrals beyond middle, 6 or 7 large black anteroventrals on anterior surface near tip. Tibia I without distinctive setae; tibia II with 1 large anterodorsal and 1 smaller posterodorsal near  $1/4$ , 4 distinct apicals with only ventral ones rather large; tibia III very short, with notch in tip dorsally, lengths relative to tarsal segments as tibia 19 and notch 4, longer hairs anteriorly and below. Tarsus I with pulvilli nearly  $1/2$  as long as 5th segment; tarsus III with basitarsus bearing distinct dorsal and rather large anteroventral near  $1/4$ ,

rather large posteroventral near  $2/5$ ; relative lengths of tarsal segments from base as tarsus I, 10-5-4-2-3; tarsus II, 13-6-5-3-3; tarsus III, 19-8-6-3-3.

Wing narrowly elliptical with anal lobe nearly vestigial; surface clear with brown veins. Vein 1 reaching  $1/3$  length of wing; vein 2 essentially straight; vein 3 and last of vein 4 nearly straight, parallel. Crossvein ca.  $1/3$  as long as last of vein 5. Calypter and halter yellow, setae of former brown to black.

Abdomen gradually tapering, yellowish green with coppery reflections; hairs and bristles short, marginal bristles of tergites about 2 or less times as long as hairs, tergite 6 broad with numerous hairs. Hypopygium brown with a few short setae posteriorly; lamellae rather small, narrowly oval, brown with short pale hairs.

**FEMALE.**—Face slightly over twice as high as wide with nearly straight sides, covered with gray pollen; clypeus forming lower  $1/3$  of face, lower margin nearly straight; palpus broadly oval, yellowish brown with scattered, pale brownish setae; antennal segment 3 truncated-triangular, 1.5 times as high as long, arista from beside shallow apical sinus. Femora without series of longer anteroventral and posteroventral hairs, black setae near tips present but those of hind femur fewer and smaller; tibia II sometimes with added pair of very small dorsals near  $3/5$ ; hind tibia of normal length with large anterodorsals and posterodorsals near  $1/4$  and  $3/5$ , 1 small posterodorsal near  $2/5$  and 1 larger near tip, 3 small apicals anteriorly and ventrally; hind basitarsus plain; relative lengths of hind tibia as 32, tarsus as 10-7-4-3-4. Wing broadly oval with rounded anal margin.

**COLLECTION DATA.**—Dominica: 13 ♂ and 17 ♀ 23 Jan-17 Feb 1964 H. Robinson, 1 ♀ 4 Feb 1964 D. F. Bray, 1 ♂ malaise trap 11-20 Jan 1965 W. W. Wirth, 1 ♂ 4 June 1966 G. Steyskal, 1 ♀ 10-31 Oct 1966 A. B. Gurney, all Clarke Hall; 1 ♂ and 1 ♀ near Layou 10 Mar 1964 H. Robinson; 1 ♀ Anse Bouleau 10 Oct 1964 P. J. Spangler; 1 ♂ 9 Jan, 1 ♂ 10 Mar 1965 Layou River mouth W. W. Wirth; 5 ♂ and 2 ♀ some in light trap 23 Feb, 8 ♂ 22-25 Mar 1965 W. W. Wirth, 7 ♂ and 8 ♀ 10-13 May 1965 D. R. Davis, all Cabrit Swamp; 1 ♂ Trafalgar Falls 21 May 1965 D. R. Davis; 1 ♀ Bells 20 Sept 1965 D. L. Jackson.

**REMARKS.**—The species is known from Puerto

Rico, Dominica, and Argentina. The form of the male hind leg is thoroughly distinctive. The short tibia and the basitarsus function together like a normal tibia. The basitarsus is held on three sides by the tip of the tibia, being locked in and only able to bend upward. The setae on the male hind basitarsus are like those normally borne on the distal part of a hind tibia.

### *Chrysotus minimus*, new species

**MALE.**—Length 1.1 mm; wing 1.1 mm by 0.4 mm. Eyes broadly contiguous below; face obliterated except narrow metallic green triangle above obscured with gray pollen; front bright metallic green, often coppery when dry. Palpus minute, usually hidden, with small apical black seta; proboscis brownish yellow. Antenna dark brown; segments 1 and 2 short; segment 3 with base slightly wider than preceding segment, scarcely as long as wide, constricted into narrow prolongation 4 times as long as base, prolongation bearing numerous long hairs; arista apical, ca.  $1/3$ , as long as segment 3. Lower post-ocular setae pale, scarcely noticeable.

Thorax with mesoscutum and scutellum bright metallic light green, humeri and pleura yellow; acrostichals biseriate; 5 pairs of distinct dorso-centrals; scutellum without lateral hair; small pale seta above fore coxa.

Legs yellow with 5th tarsal segments brown; bristles brown; hairs mostly brownish, rather pale on coxae and ventrally on femora. Hairs of fore coxa rather short, a few longer distally. All femora with a series of some rather erect, longer hairs anteroventrally. Tibia I without distinctive setae; tibia II with small anterodorsal near base scarcely longer than width of tibia, 2 small apicals anteriorly and ventrally; tibia III with small distinct apical dorsally, series of 2-4 rather erect, longer hairs posterodorsally near tip, similar series of ca. 6 hairs along middle of posterior surface. Relative lengths of tarsal segments from base as tarsus I, 10-5-3-2-3; tarsus II, 12-5-4-2-3; tarsus III, 7-7-5-3-3.

Wing elliptical; clear, veins brownish. Vein 1 reaching  $2/5$  length of wing; vein 2 slightly curved forward at extreme tip; vein 3 slightly arched in distal part, nearly as far from last of vein 4 opposite crossvein as at margin. Crossvein ca.  $1/3-1/4$  as long as last of vein 5. Calypter with brownish margin and setae; halter yellowish.

Abdomen gradually tapering, brown above, basal sternites pale; hairs and marginal setae short, brown; tergite 6 narrow with a few small setae. Hypopygium brown, with a few brown setae posteriorly; lamellae small, oval, brownish, bearing short pale hairs.

**FEMALE.**—Face ca. twice as long as upper width, ca.  $1/3$  as wide at suture as above; clypeus forming lower  $2/5$  of face, slightly wider and projecting below; face rather violet with whitish pollen; palpus broadly oval, yellow with slight whitish pollen and scattered yellowish setae. Antennal segment 3 without apical prolongation, arista 1.5 times as long as face. Legs without the more erect, longer hairs anteroventrally on femora or posteriorly on hind tibia.

**TYPE DATA.**—Holotype ♂, 2 ♂ and 1 ♀ paratypes from Dominica: Fond Figues River, rain forest 3 Feb 1965 W. W. Wirth (USNM 72906). Allotype ♀ from Dominica: Pont Casse 1.5 miles north 12 Feb 1965 W. W. Wirth. Additional paratypes from Dominica: 2 ♀ 17 Mar 1956 J. F. G. Clarke, 2 ♂ and 1 ♀ 15 Feb 1965 W. W. Wirth, all Dleau Gommier; 10 ♂ and 11 ♀ 1–21 Mar 1964 H. Robinson, 1 ♂ 20 Apr 1966 R. J. Gagné, all Clarke Hall; 1 ♂ and 1 ♀ Clarke Hall, Manets Gutter 7 Mar 1965 W. W. Wirth; 1 ♀ South Chiltern Estate 26 Mar 1964 H. Robinson; 3 ♂ and 3 ♀ 25 Jan, 7 ♂ rain forest 9 Feb, 19 ♂ and 21 ♀ light trap 13 Mar 1965 W. W. Wirth, 1 ♀ 400' 12 Apr 1966 R. J. Gagné, all Fond Figues River; 1 ♀ Freshwater Lake 26 Aug 1965 D. L. Jackson; 1 ♀ trail, 1 mile north junc. rds. to Rosalie and Castle Bruce, 1300' 23 Apr 1966 R. J. Gagné.

**REMARKS.**—The new species is most easily distinguished by the yellow color of the pleura and basal sternites. A similarly colored species, *Chrysotus pectoralis* Van Duzee of the southeastern United States, differs by the shorter third antennal segments and longer aristae of the male and by the more violet front and mesoscutum.

### *Chrysotus mexicanus* Robinson

*Chrysotus mexicanus* Robinson, 1967:120.

**MALE.**—Length ca. 2.0 mm; wing ca. 2.0 mm by 0.9 mm. Eyes essentially contiguous below middle of face; face narrow above, covered with yellowish pollen; front metallic green with slight yellowish

pollen. Palpus yellow; proboscis yellowish brown. Antenna with segment 1 and most of segment 2 yellow, upper part of 2nd and most of segment 3 brown; segments 1 and 2 short; segment 3 longer than 2nd, 1.5 times as long as high, upper edge rather oblique; arista in slight apical sinus, 1.5 times as long as facial area. Lower postocular setae pale.

Thorax metallic green, dulled with yellowish pollen above, with thicker whitish pollen on pleura; acrostichals biseriate; 5 pairs of dorsocentrals; scutellum with small hair on lateral margin; a pale seta above fore coxa.

Legs mostly pale; middle coxa and base of hind coxa brownish. Setae mostly dark; many long pale setae on anterior surface of fore and middle coxae. Femur I with series of prominent posteroventrals longer toward tip of femur, ventral setae paler toward base of femur; femur II with rather short, pale ventral setae; femur III with 2 or 3 brownish anteroventral bristles near tip, ventral margin with sparse pubescence, at base bearing a pair of distinct black setae that are close and often adhering to each other. Tibia II with 1 strong anterodorsal and 1 weak posterodorsal near  $1/3$ , very small bristle in each dorsal row beyond  $1/2$ , 3 distinct apicals; tibia III with 2 rather strong anterodorsals, 3 smaller posterodorsals rather evenly spaced, 2 apicals, 1 subapical. Relative lengths of tarsal segments from base as tarsus I, 8–4–3–2–2; tarsus II, 9–4–3–2–3; tarsus III, 7–5–4–3–3.

Wing rather oblong-oval; clear with brownish veins. Vein 1 reaching ca.  $3/8$  length of wing; vein 2 straight, only slightly diverging from 3rd; veins 3 and 4 nearly straight and parallel beyond crossvein. Crossvein a little less than  $1/2$  as long as last of vein 5. Calypter and halter pale, setae of former light brownish.

Abdomen metallic green with slight pollen which is more yellowish above; setae mostly short with rather pale reflections, some slightly longer, darker setae near margins of tergites, tergite 6 rather small with many short setae. Hypopygium small, brown, with few erect hairs posteriorly; lamellae small, with rather rounded lower edge, brownish with many short brownish hairs; armatures stout, dark, with blunt tip bearing 2 short but distinct setae.

**FEMALE.**—Face about twice as high as wide with straight sides, metallic green dulled with yellowish gray pollen; clypeus forming lower  $2/5$  of face, with rather straight lower margin; palpus broader with

numerous short black setae. Setae on anterior surface of fore coxa much shorter; femora without longer or distinctive setae ventrally; hind tibia with generally stronger setae.

COLLECTION DATA.—Dominica: 3 ♂ and 1 ♀ 22–23 Jan 1964 H. Robinson, 1 ♂ 11 Feb 1964 D. F. Bray, 4 ♂ and 1 ♀ malaise and light traps 8 Jan–31 Mar 1965 W. W. Wirth, 1 ♀ 28 Mar 1966 R. J. Gagné, 1 ♂ 28 May 1966 G. Steyskal, all Clarke Hall; 8 ♂ and 4 ♀ near Layou 27 Jan, 2 ♂ near Layou River mouth 10 Mar 1964 H. Robinson; 6 ♂ and 3 ♀ 9 Jan, 1 ♂ 8 Mar, 5 ♂ and 1 ♀ 18–24 Mar 1965 Layou River mouth, W. W. Wirth; 8 ♂ and 3 ♀ 22–25 Mar 1965 W. W. Wirth, 1 ♂ 10–13 May 1965 D. R. Davis, all Cabrit Swamp; 1 ♂ Holmwood Estate 9 Sept 1965 D. L. Jackson; 2 ♀ Portsmouth 1–2 Apr 1966 R. J. Gagné; 1 ♂ Melville Hall Airport 14 July 1966 G. Steyskal.

REMARKS.—The species is probably widely distributed in the Neotropical region with specimens seen from the Lesser Antilles and from many places in Mexico. The species is very similar to *Chrysotus picticornis* Loew of North America and southern Mexico and identified as such in earlier studies. The present species is most notably distinct in the pair of short, black setae near the base ventrally on the male hind femur.

### *Chrysotus xiphostoma*, new species

MALE.—Length 1.4 mm; wing 1.4 mm by 0.5 mm. Eyes essentially contiguous below; face nearly obliterated, forming a short yellow pollinose line which is slightly wider above and below; front metallic green with thin whitish pollen becoming thicker below. Palpus a long, narrow, slightly curving blade with parallel sides, about as long as fore tarsus, silvery white pollinose with a few dark hairs scattered along inner edge; proboscis and antenna bright orange-yellow. All antennal segments short and small; segment 3 about as long as wide, blunt with numerous long hairs; arista apical, twice as long as face. Lower postocular setae white, lowest rather long.

Thorax dark metallic green, shining above; pleura obscured by fine grayish pollen; acrostichals biseriate; 5 distinct pairs of dorsocentrals; scutellum with small hair on lateral margin; small, rather pale seta above fore coxa.

Legs including coxae mostly pale; middle and

hind coxae outer surface near base, distal 1/2 of hind femur, fore and middle tarsi from tip of basitarsus and hind tarsus from tip of segment 2 brownish. Most hairs brown with anterior hairs of coxae, ventral basal hairs of femora I and III and most hairs on basal 1/4 of middle femur white. Distal hairs of fore coxa slightly longer. Femur I without distinctive setae; femur II with series of ca. 8 long erect posteroventral setae nearly 1/2 as long as width of femur; femur III with usual anteroventrals near tip. Tibia I without distinctive setae; tibia II with small anterodorsal near 1/4 nearly twice as long as width of tibia, 2 or 3 small apicals with only anterior and anteroventral distinct; tibia III with series of ca. 13 distinct setae along anterodorsal surface all about as long as width of tibia, 4 or 5 small posterodorsals with only 2 or 3 (including the subapical) distinct, smaller apical below. Tarsus I with tip of basitarsus and next 3 segments slightly thickened; relative lengths of tarsal segments from base as tarsus I, 12–5–4–3–3; tarsus II, 15–7–5–3–2; tarsus III, 8–8–5–4–3.

Wing elliptical with slightly narrowed anal lobe; clear with brownish veins. Vein 1 reaching 1/3 length of wing; veins 2, 3, and 4 curving slightly backward, veins 3 and 4 parallel beyond crossvein. Crossvein ca. 1/2 as long as last of vein 5. Calypter and setae brown; halter yellow.

Abdomen gradually tapering, rather bluish or violet; setae brownish; marginal setae of tergites not or scarcely distinct, tergite 6 broad with numerous setae. Hypopygium small, brown, with a few erect setae posteriorly; lamellae small, pale brownish with many fine pale brownish hairs.

FEMALE.—Face about twice as high as upper width, greatly narrowed at clypeus to 1/3 upper width, dark bluish green dulled with brownish gray pollen; clypeus forming lower 2/5 of facial height, broadened below with rather pointed lower margin. Palpus short and broad, black with numerous short black setae. Antenna with segment 3 brown. Fore coxa and femur not as whitish yellow; femur II without longer setae ventrally; tibia III with 1 anterodorsal near 1/4 about as long as width of tibia; middle segments of fore tarsus not thicker.

TYPE DATA.—Holotype ♂, 4 ♂, and 2 ♀ paratypes from Dominica: Clarke Hall, light trap 21–31 Jan 1965 W. W. Wirth (USNM 72907). Allotype ♀ and 2 ♀ paratypes from Dominica: Clarke Hall 13–17 Oct 1966 A. B. Gurney. Additional paratypes

from Dominica: 1 ♀ Springfield Estate 20–26 July 1963 O. S. Flint; 9 ♂ and 13 ♀ 22 Jan–4 Feb 1964 H. Robinson, 2 ♀ 3 Feb 1964 D. F. Bray, 1 ♀ 3–8 Oct 1964 P. J. Spangler, 4 ♀ malaise trap 8 Jan–31 Mar, 1 ♂ cocoa trail 18 Jan, 5 ♂ light trap 1 Feb–20 Mar 1965 W. W. Wirth, 7 ♂ and 1 ♀ 20 May–14 June 1966 G. Steyskal, all Clarke Hall; 2 ♂ and 3 ♀ Rosalie River 28 Jan–14 Feb, 1 ♂ and 1 ♀ South Chiltern Estate 7–8 Feb 1964 H. Robinson; 1 ♂ Macoucheri, river mouth 14 Jan, 1 ♀ Layou River mouth 15 Jan, 1 ♂ Grande Savane 1 Feb, 1 ♂ Pagua Bay 18 Feb, 1 ♀ light trap 23 Feb, 2 ♂ and 2 ♀ 22–25 Mar 1965 Cabrit Swamp, 1 ♀ Woodford Hill, swamp forest 27 Feb, 1 ♀ Fond Figue River, light trap 13 Mar 1965 W. W. Wirth; 1 ♂ Cabrit Swamp 10–13 May 1965 D. R. Davis; 1 ♂ LaHaute (NW) 11 Sept 1965 D. L. Jackson; 1 ♀ Trafalgar Falls, 1200' 5–6 Apr 1966 R. J. Gagné; 1 ♂ Melville Hall Airport 14 June 1966 G. Steyskal.

REMARKS.—The new species is in the group of *Chrysotus* having ornate palpi in the male. The closest relationship is to *C. longipalpus* Aldrich of St. Vincent and Grenada, but the latter differs by the palpus being less stiff and broader in the middle, the hind femur not being dark distally, and the antenna being more brownish yellow.

### *Chrysotus acutus* Aldrich

*Chrysotus acutus* Aldrich, 1896:329.

MALE.—Length 1.4 mm; wing 1.4 mm by 0.5 mm. Eyes contiguous below; face obliterated except narrow, grayish pollinose, greenish triangle above and much smaller triangle below; front bluish to bluish green with slight pollen. Palpus and proboscis brown, former with short dark setae. Antenna dark brown; segments 1 and 2 short; segment 3 long-triangular, 2.5 to 3 times as long as basal height, apex deeply cleft between 2 narrow projections, lower projection longer; arista inserted in cleft of segment 3, about as long as face. Lower postocular setae dark.

Thorax with mesoscutum and scutellum metallic green with slight pollen; pleura more brown with thicker brownish pollen; acrostichals biseriate; 5 pairs of distinct dorsocentrals; scutellum with very minute hair on lateral margin; small pale brownish seta over fore coxa.

Legs with coxae, femora except sometimes tip of fore femur, base of hind tibia, and 5th segments of tarsi brown; fore tibia and base of fore tarsus whitish with white hairs; middle and hind tibiae and tarsi yellow with more distal tarsal segments darker. Hairs and bristles mostly brown to black with hairs of fore tibia and most of fore tarsus white. Fore coxa with short, pale brown hairs anteriorly, setae at tip darker and slightly longer. Fore femur with a series of very short, erect pale hairs anteroventrally, femur III with series of longer erect ventral setae 1/2 as long as width of femur, short series of longer setae anteroventrally near tip. Tibia I with prominent series of larger, stouter white hairs along posterodorsal surface; tibia II with 1 small anterodorsal near 1/3, only 2 small apicals ventrally; tibia III without distinctive setae. Relative lengths of tarsal segments from base as tarsus I, 10–3–3–2–2.5; tarsus II, 13–6–5–2–3; tarsus III, 7–7–4–2–3.

Wing elliptical; clear with brownish veins. Vein 1 reaching slightly over 1/3 length of wing; vein 2 straight; vein 3 and last of vein 4 parallel and curving gradually backward. Crossvein ca. 3/5 as long as last of vein 5. Calypter, setae, and knob of halter dark brown.

Abdomen gradually tapering, dark brown with some violet reflections when dry; setae black, most very short; tergite 6 broad with numerous hairs. Hypopygium small, brown with some short setae posteriorly; lamellae small, ovate, pale brownish with short pale marginal hairs.

FEMALE.—Face about twice as high as upper width, bluish to violet obscured with grayish pollen, narrowed at clypeus to ca. 2/3 of upper width; clypeus forming lower 2/5 of face, slightly wider and bluntly pointed below. Palpus wider with more dark hairs. Antennal segment 3 a truncated triangle, slightly shorter than high with slight point below arista. Lower postocular setae mostly dark as in male. Legs with fore femur usually more yellowish toward tip; fore tibia and tarsus yellow with brownish hairs; only longer ventral setae on femora are near tips; posterior series of setae on fore tibia not distinctive; lengths of segments of fore tarsus as 10–4–3–2–2. Crossvein of wing ca. 1/2 as long as last of vein 5. Knob of halter brown as in male.

COLLECTION DATA.—Dominica: 1 ♂ North Deux Dleau River 28 Jan 1964 H. Robinson; 3 ♂ and 2 ♀ 7 Feb 1964 H. Robinson, 1 ♂ 2 Feb 1965



W. W. Wirth, all South Chiltern Estate; 6 ♂ and 1 ♀ 20 Feb–3 Mar 1964 H. Robinson, 1 ♂ cocoa trail 16 Feb 1965 W. W. Wirth, 1 ♀ 13–17 Oct 1966 A. B. Gurney, all Clarke Hall; 2 ♂ and 1 ♀ Fond Figue River, rain forest 3–9 Feb 1965 W. W. Wirth; 1 ♂ Bells 20 Sept 1965 D. L. Jackson.

REMARKS.—The species has been reported from the Lesser Antilles and Central America. Material seen under the name from Costa Rica lacks pale hairs on the fore tibia.

*Chrysotus subcaudatus*, new species

MALE.—Length 1.5 mm; wing 1.3 mm by 0.5 mm. Eyes contiguous below; face obliterated except brownish yellow pollinose triangle in upper 1/2 and minute triangle below; front metallic dark blue with slight brownish pollen. Palpus 1/2 as long as face, broadly rounded-oblong, white pollinose with only 1 minute dark seta evident. Antenna black; segments 1 and 2 short, small, 2nd not produced; segment 3 twice as high as long, rounded apically with arista in median-apical truncation, arista 1.5 times as long as face. Postocular setae mostly black, a few pale below.

Thorax dark olive-green, mesoscutum and scutellum with slight brown pollen, slight grayish pollen on pleura; setae black; acrostichals biseriate; 5 pairs of distinct dorsocentrals; scutellum without any small seta on lateral margin; small, pale brownish seta above fore coxa.

Legs with coxae, femora, and tarsi from tips of basitarsi dark brown, at least bases and tips of tibiae usually brownish yellow, middle of tibiae and basitarsi usually paler yellow. Setae mostly brown or black. Fore and middle coxae with numerous short pale hairs anteriorly, seta of hind coxa pale. Femora with few scarcely longer ventral setae near tips. Tibia I without distinctive setae; tibia II with small distinct anterodorsal near 1/4, 2 rather distinct apicals anteroventrally and ventrally; tibia III with small, rather indistinct dorsals, 1 anterodorsal near 1/4, posterodorsals near 1/4, 1/2, 3/4, and tip, 1 very small apical anteroventrally. Tarsus I with pulvilli near 1/2 as large as last tarsal segment, middle and hind tarsi with pulvilli not enlarged; relative lengths of tarsal segments from base as tarsus I, 5–3–2–1.5–1.5; tarsus II, 6–3–2–1.5–1.5; tarsus III, 4–3–2–1.5–1.5.

Wing oblong-elliptical; clear with brown veins.

Vein 1 reaching 1/3 length of wing; veins 2 and 3 essentially straight and slightly diverging; vein 4 straight and parallel with vein 3 in most of last part, curving slightly but distinctly backward near tip. Crossvein ca. 1/2 as long as last of vein 5. Calypter with pale or slightly brownish setae; knob of halter yellow.

Abdomen rather broad and truncate, curving downward; tergites dark olive-green with slight yellowish pollen; sternites brown; setae black; marginal setae of tergites only slightly longer, tergite 6 scarcely evident with few setae. Hypopygium rather large and broad but mostly enclosed in tip of preabdomen, brown with only few very short setae; appendages brown; lamellae small, ovate with numerous short dark hairs, projecting prominently downward or forward from tip of hypopygium.

FEMALE.—Face twice as high as upper width, narrowed in middle to 2/3 upper width, obscured above by brownish gray pollen; clypeus forming lower 2/5 of face, dark metallic bluish with only slight pollen; palpus larger, blackish with more setae; lower postocular setae more prominently pale. Scutellum without lateral seta. Fore coxa with most of hairs pale; tibiae and basitarsi yellow; tibia II with added small posterodorsal near 3/5, added apical dorsally; tibia III with 2 distinct anterodorsals near 1/5 and 3/5, series of 4–8 rather distinct posterodorsals, 3 distinct, small apicals; tarsi without enlarged pulvilli. Tip of wing vein 4 less distinctly curving.

TYPE DATA.—Holotype ♂ from Dominica: Clarke Hall, malaise trap 8–10 Jan 1965 W. W. Wirth (USNM 72908). Allotype ♀ and 1 ♀ paratype from Dominica: Trafalgar Falls, 1200' 5–6 Apr 1966 R. J. Gagné. Additional paratypes from Dominica: 1 ♀ Boeri Lake trail 22 Feb 1964 H. Robinson; 2 ♂ 9 Jan, 1 ♂ 6 Feb 1965 Layou River mouth, 1 ♂ Grande Savane 1 Feb, 1 ♂ Macoucheri, sea shore 14 Feb, 1 ♂ Pont Casse 1.7 miles east 12 Mar 1965 W. W. Wirth.

REMARKS.—The new species belongs to a group with rather stout preabdomens, with rather prominent hypopygial lamellae, with slightly divergent tips of the third and fourth wing veins, and with white pollinose male palpi. The new species is most distinct from its close relatives by the lack of any small seta on the lateral margin of the scutellum, by the paler hairs on the fore coxa, and by the lack of distinct anteroventral setae on the male hind

femur. Female specimens are rather distinct by the more prominent row of posterodorsal setae on the hind tibia.

***Chrysotus mediocaudatus*, new species**

FIGURE 187

MALE.—Length 1.8 mm; wing 1.6 mm by 0.6 mm. Eyes contiguous below; face obliterated except small brown pollinose triangle above and much smaller triangle below; front metallic green with brownish pollen toward sides and base. Palpus small, tips exerted, white with a few dark hairs; proboscis brown. Antenna brown; all segments short and small; segment 3 slightly higher than long, rather truncate apically; arista from shallow apical sinus or to one side, 1.5 times as long as face. Postocular setae brown or black.

Thorax metallic green above with slight yellowish pollen; pleura more brown with grayish pollen; acrostichals biseriate; 5 distinct pairs of dorso-centrals; scutellum with hairs on lateral margin; 1 or 2 small dark setae above fore coxa.

Legs with coxae, femora, and most of tarsi from tips of basitarsi brown; tibiae and bases of tarsi yellow. Hairs and bristles dark. Fore coxa with numerous erect spreading hairs, distal setae not longer. Fore femur with distinct series of short erect anteroventrals, series along distal 1/2 posterodorsally becoming longer; femur II with distinct series of more erect, longer setae on distal 1/2 anteroventrally and posteroventrally, longer hairs posteriorly on distal 1/4; femur III with distinct series of long, erect setae ventrally, many 1/2 as long as width of femur, a series anteroventrally near tip. Tibia I without distinctive setae; tibia II with a distinct anterodorsal near 1/4, a small posterodorsal and sometimes an anterodorsal near 3/4, 4 distinct apicals; tibia III with 2 small anterodorsals near 1/4 and beyond 1/2, 3 small posterodorsals at 1/5, 2/5, and 3/5, 4 small apicals. Tarsus I with 5th segment slightly broader; relative lengths of tarsal segments from base as tarsus I, 10–5–3–2–5; tarsus II, 15–7–4–3–4; tarsus III, 10–7–5–3–4.

Wing oblong-elliptical; brownish tinged, with brown veins. Vein 1 reaching 3/8 length of wing; veins 2, 3, and last of 4 straight, 2 distinctly divergent from 3, vein 3 and last of 4 slightly divergent.

Crossvein 2/3 as long as last of vein 5. Calypter and setae blackish; knob of halter yellow.

Abdomen unusually broad and firm, thickly cylindrical nearly to tip, dark brown with violet above; setae brown, marginal setae of tergites scarcely longer than hairs, tergite 6 broad with numerous hairs. Hypopygium (Figure 187) rather large with semicircular hind profile, bearing numerous small dark hairs posteriorly; lamellae as long as knob of halter, narrowly ovate, pale to pale brownish with short brownish setae.

FEMALE.—Length up to 2.1 mm. Face twice as high as upper width, narrowed in middle to ca. 3/5 upper width, obscured above by grayish pollen; clypeus forming lower 2/5 of face, dark metallic bluish green with only slight pollen; palpus larger, blackish with more setae; lower postocular setae dark. Scutellum with small seta on lateral margin. Fore coxa with setae dark; tibia I with 1 or 2 very indistinct dorsals; tibia II with anterodorsal and posterodorsal slightly more prominent; tibia III with 3 distinct anterodorsals, 3 posterodorsals, 3 apicals; tarsi without enlarged pulvilli.

TYPE DATA.—Holotype ♂ from Dominica: Fond Figues River 9 Feb 1965 W. W. Wirth (USNM 72909). Allotype ♀ from Dominica: Trafalgar Falls, 1200' 5–6 Apr 1966 R. J. Gagné. Paratypes from Dominica: 1 ♂ North Deux Dleau 14 Feb, 1 ♂ La Ronde River 15 Feb, 1 ♂ Trafalgar Falls 15 Mar 1964 H. Robinson; 4 ♂ 16 Mar 1964 H. Robinson, 3 ♂ 30 Jan–12 Mar 1965 W. W. Wirth, all Fond Figues River.

REMARKS.—The new species seems very distinct in the firm cylindrical abdomen with rather prominent, erect lamellae. A possible relative may be *Chrysotus magnipalpus* Van Duzee, of Cuba, but it has larger palpi and dark hypopygial lamellae.

***Chrysotus lamellicaudatus*, new species**

FIGURE 188

MALE.—Length 1.7 mm; wing 1.8 mm by 0.6 mm. Eyes contiguous below; face obliterated except small brown pollinose triangle above and much smaller triangle below; front metallic green with brownish pollen toward sides and base. Palpus rather small, tips exerted, white with a few dark hairs; proboscis brown. Antenna brown; all seg-

ments short and small; segment 3 slightly higher than long, rather truncate apically; arista from shallow apical sinus, 1.5 times as long as face. Postocular setae brown.

Thorax metallic dark green above with slight pollen; pleura more brown with grayish pollen; acrostichals biseriate; 5 distinct pairs of dorso-centrals; scutellum with hair on lateral margin; 1 or 2 dark setae above fore coxa.

Legs with coxae, femora, extreme bases of tibiae, tip of hind tibia, and most of tarsi from tips of basitarsi brown; tibiae and bases of tarsi yellow. Hairs and bristles dark. Fore coxa with numerous erect, spreading hairs, distal setae not longer. Femur I with a series of short, more erect setae antero-ventrally, a series of longer setae posteroventrally on distal 1/2 of femora I and II, a series of longer erect ventrals along femur III of which most are 1/2 as long as width of femur, series of longer anteroventrals distally, 1 or 2 longer median anterior setae. Tibia I without distinctive setae; tibia II with distinct anterodorsal near 1/5 ca. 1.5 times as long as width of tibia, 4 distinct apicals; tibia III with 1 distinct anterodorsal near 1/4, 1 smaller near 3/5, indistinct posterodorsals near 1/4 and 1/2, 1 larger near 3/5, 4 rather small apicals. Tarsus I with segment 5 rather broad; relative lengths of tarsal segments from base as tarsus I, 13-6-4-3-4; tarsus II, 17-7-6-4-4; tarsus III, 10-9-6-4-4.

Wing oblong-elliptical; slightly brownish tinged, veins brown. Vein 1 reaching 1/3 length of wing; veins 2 and 3 essentially straight; last of vein 4 nearly straight and parallel with vein 3, diverging very slightly at tip. Crossvein 3/5 as long as last of vein 5. Calypter margin and setae black; halter yellow.

Abdomen unusually broad and firm, thickly cylindrical nearly to tip, dark brownish with violet reflections above; setae brown, marginal setae of most tergites less than twice as long as hairs; tergite 6 broad with numerous hairs, tergite lying across rather truncated tip of preabdomen. Hypopygium (Figure 188) brown, rather large, a few setae posteriorly; lamellae large, rather oblong, brownish, with glabrous surface, and a series of large black setae along truncated distal margin.

FEMALE.—Face twice as high as upper width, greenish to violet obscured with grayish pollen, 2/3 as wide at clypeus; clypeus forming lower 1/3 of face, slightly broader below. Palpus larger, black-

ish with more setae. Postocular setae dark as in male. Fore femur yellowish on ventral 1/2, only a few distal setae of femora longer; fore tarsus with 5th segment not as broad.

TYPE DATA.—Holotype ♂ from Dominica: South Chiltern Estate 2 Feb 1965 W. W. Wirth (USNM 72910). Allotype ♀, 3 ♂ and 1 ♀ paratypes from Dominica: Fond Figue River 9-12 Mar 1965 W. W. Wirth. Additional paratypes from Dominica: 4 ♂ and 1 ♀ 23 Jan-2 Mar 1964 H. Robinson, 3 ♂ cocoa trail 18 Jan, 1 ♂ and 1 ♀ 11-20 Feb, 1 ♂ malaise trap 21-31 Mar 1965 W. W. Wirth, 1 ♀ 3 May 1966 R. J. Gagné, 1 ♂ 6 June 1966 G. Steyskal, 1 ♀ 11 Oct. 1966 A. B. Gurney, all Clarke Hall; 5 ♂ 6-7 Feb 1964 H. Robinson, 1 ♂ 20 Feb 1965 W. W. Wirth, all South Chiltern Estate; 1 ♀ near Sylvania 10 Feb, 1 ♂ Freshwater Lake 21 Feb, 7 ♂ and 3 ♀ Boeri Lake trail 22 Feb 1964 H. Robinson, 4 ♂ Fond Figue River 30 Jan-9 Feb 1965 W. W. Wirth; 2 ♂ Pt. Mulatre 15 Sept 1965 D. L. Jackson; 2 ♂ and 1 ♀ Trafalgar Falls, 1200' 5-6 Apr 1966 R. J. Gagné.

REMARKS.—The new species is very closely related to *Chrysotus albipalpus* Aldrich of St. Vincent but the latter has hypopygial lamellae with more hairs on the surface and outer edge, hind tibia with a series of distinct posterodorsals, longer ventral setae on the hind femur with some as long as the width of the femur, a series of long setae along the mid-anterior surface of the hind femur, and all the tarsi with enlarged pulvilli.

### *Chrysotus niger* Aldrich

*Chrysotus niger* Aldrich, 1896:327.

MALE.—Length 2.6 mm; wing 2.5 mm by 0.5 mm. Eyes contiguous below; face obliterated except dark blackish brown pollinose triangle above and very small triangle below; front greenish black with slight brown pollen. Palpus and proboscis black, former with only very short setae. Antenna black; all segments short; segment 3 blunt, slightly higher than long; arista from just to outer side of tip, 1.5 times as long as face. Only lower 1/4 to 1/5 of postocular setae white.

Thorax with mesoscutum shining greenish black dulled with slight brown pollen, scutellum more metallic green; pleura brown with slight greenish reflections and more brown pollen; acrostichals

biseriate; 5 pairs of distinct dorsocentrals; scutellum with minute hair on lateral margin; 1 or 2 brownish setae above fore coxa.

Legs dark brown; coxae and femora more blackish. Hairs and bristles brown. Fore coxa with rather short setae, distal setae only slightly longer. Fore femur with posteroventral series of short but distinct, rather erect setae; femur II with similar series of shorter setae anteroventrally and posteroventrally, ca. 3 longer, erect setae posteriorly near tip; femur III with series of short setae anteroventrally. Tibia I without distinctive setae; tibia II with very small anterodorsal near 1/3, 2 small distinct apicals below; tibia III with 2 very small posterodorsals near 2/5 and 3/5, 2 very small apicals above and below. Relative lengths of tarsal segments from base as tarsus I, 12-5-4-3-3; tarsus II, 15-7-5-3-3; tarsus III, 10-7-5-3-4.

Wing broadly oblong-elliptical; clear, veins brown. Vein 1 reaching 2/3 length of wing; vein 2 essentially straight; vein 3 very slightly curving backward; last of vein 4 slightly more curved than 3, nearly parallel with vein 3. Crossvein 2/3 as long as last of vein 5. Calypter, setae, and knob of halter black.

Abdomen black with black setae; marginal setae of tergites scarcely distinct, tergite 6 broad with numerous hairs. Hypopygium small, black with a few short erect setae posteriorly; lamellae small, brown with numerous short brownish hairs.

**FEMALE.**—Length 2.0 mm; wing 1.9 mm by 0.7 mm. Face twice as high as upper width, slightly but distinctly narrowed to clypeus, metallic green obscured by brown pollen, paler brown pollen along sides; clypeus forming lower 2/5 of face, slightly wider and slightly pointed at lower margin. Palpus broader with more setae. Lower 1/2 of postocular setae white. Front and mesoscutum paler metallic green obscured by light brown pollen. Tibiae and basitarsi yellow; tibia II with rather large anterodorsal near 1/3; tibia III with distinct anterodorsal near 1/4, usually 3 or 4 slightly smaller posterodorsals near 1/5, 2/5, 3/5, and 4/5, the middle 2 most consistent. Wing venation as in male but more lax. Knob of halter yellow.

**COLLECTION DATA.**—Dominica: 1 ♀ South Chiltern Estate 8 Feb 1964 D. F. Bray; 1 ♂ Anse Bouleau 10 Oct 1964 P. J. Spangler; 29 ♂ and 10 ♀ some in light and malaise traps 8 Jan–31 Mar 1965 W. W. Wirth, 1 ♀ 28 Mar 1966 R. J. Gagné, 2 ♂

5–13 June 1966 G. Steyskal, 1 ♂ 10 Oct 1966 A. B. Gurney, all Clarke Hall; 2 ♂ Layou River mouth 20 Jan, 8 Mar, 1 ♂ Grande Savane 1 Feb, 1 ♂ 1 Feb, 1 ♂ 5 Mar, 1 ♂ 15 Mar Macoucheri, 3 ♂ 23 Feb, 1 ♂ and 6 ♀ light trap 23 Feb, 1 ♂ 22–25 Mar Cabrit Swamp, 1 ♂ Hillsborough Estate 15 Mar 1965 all W. W. Wirth; 1 ♂ l'Anse Noire 11 Sept, 1 ♂ Pt. Mulatre 15 Sept 1965 D. L. Jackson.

**REMARKS.**—The species is presently known only from St. Vincent and Dominica. The females assigned to the species by Aldrich seem to belong to *Chrysotus acutus* Aldrich instead. The sometimes marked differences between the sexes of *Chrysotus* make even the present assignment uncertain, but the female described above meets the essential criteria of the species.

#### *Chrysotus pseudoniger*, new species

**MALE.**—Length 1.8 mm; wing 1.8 mm by 0.6 mm. Eyes broadly contiguous below; face obliterated except very small, narrow, brownish pollinose triangle above; front dark metallic green dulled with slight brown pollen. Palpus and proboscis black, former with only tip and a small black apical seta exerted. Antenna black; all segments short and small; segment 3 slightly shorter than high with rounded to slightly truncate tip; arista at or beside tip. Postocular setae black.

Thorax with mesoscutum and scutellum shining metallic green; pleura metallic green obscured with pale brown pollen; acrostichals biseriate; 6 pairs of distinct dorsocentrals, anterior pair usually only 2/3 as long; scutellum with small lateral hair; dark setae above fore coxa.

Legs with coxae, femora, and 5th segments of tarsi dark brown; tibiae and basal tarsal segments yellow; hind tibia and tarsus darker yellowish. Hairs and bristles almost all brown or black. Fore coxa with numerous dark hairs anteriorly, distal ones slightly longer. Femur I with series of setae on basal 2/3 anteroventrally, more basal setae longest; femur II with longer setae near tip anteriorly and posteriorly, anteroventral row slightly more distinct; femur III with anteroventral series of longer setae ending distally with 3 or 4 bristles. Tibia I with only 1 small anterodorsal near 1/3; tibia II with 2 anterodorsals near 1/3 and 1/2 the 1st large and 2nd small, 2 small posterodorsals near 1/3 and 1/2, 4 apicals with only lower 2 rather long; tibia III

with 2 anterodorsals near  $1/4$  and  $3/5$  the 1st rather large, 5 small posterodorsals near  $1/5$ ,  $2/5$ ,  $3/5$ ,  $4/5$ , and tip, 3 other small apicals, hairs largest anteroventrally. Relative lengths of tarsal segments from base as tarsus I, 12-5-4-3-3; tarsus II, 15-6-5-3-3; tarsus III, 10-7-5-3-4.

Wing narrowly elliptical with slightly narrowed anal lobe; clear, veins brown. Vein 1 reaching  $1\frac{1}{3}$  length of wing; veins 2, 3, and last of 4 curving very slightly backward; vein 3 and last of vein 4 parallel. Crossvein ca.  $1/2$  as long as last of vein 5. Calypter, setae, and halter brown.

Abdomen slightly tapering, metallic green with coppery reflections; setae brownish black, marginal setae of tergites twice or less times as long as hairs, tergite 6 broad with numerous setae. Hypopygium small, brown with a few distinct setae posteriorly; lamellae small, brown with short, pale brownish hairs.

**FEMALE.**—Face twice as high as wide with nearly straight sides, covered with thick gray pollen; clypeus forming lower  $1/3$  of face. Palpus brown, broader with more hairs. Antenna essentially like male. Lower  $1/2$  of postocular series white. Femur I with more erect anteroventral series but shorter than in male; femur II with less longer setae near tip; tibia I with second small anterodorsal near  $1/2$ ; tibia III with posterodorsal generally larger, 3rd near  $2/5$ . Halter yellow.

**TYPE DATA.**—Holotype ♂ and 3 ♂ paratypes from Dominica: Clarke Hall, cocoa trail 18 Jan 1965 W. W. Wirth (USNM 72911). Allotype ♀ from Dominica: Clarke Hall 23 Jan 1964 H. Robinson. Additional paratypes from Dominica: 8 ♂ and 1 ♀ 24 Jan–2 Mar 1964 H. Robinson, 1 ♂ 4 Feb 1964 D. F. Bray, 4 ♂ and 1 ♀ cocoa trail 16 Jan 1965 W. W. Wirth, 2 ♂ and 3 ♀ 3 Apr–30 May 1966 R. J. Gagné, all Clarke Hall; 7 ♂ and 9 ♀ 7–9 Feb 1964 H. Robinson, 1 ♀ 2 Feb 1965 W. W. Wirth, all South Chiltern Estate; 3 ♀ near Sylvania 10 Feb 1964 H. Robinson; 4 ♀ 21 Feb 1964 H. Robinson, 1 ♀ 6 Mar 1965 W. W. Wirth, all Freshwater Lake; 1 ♂ and 9 ♀ Boeri Lake trail 22 Feb–23 Mar, 1 ♂ Forest Reserve 29 Feb 1964 H. Robinson; 2 ♀ Trafalgar Falls, 1200' 5–6 Apr 1966 R. J. Gagné.

**REMARKS.**—The new species resembles *Chrysotus niger* Aldrich and was initially thought to be that species. The Aldrich species proves thoroughly

distinct in its tibiae which are darker and less setiferous.

### *Chrysotus albihirtipes*, new species

**MALE.**—Length 2.8 mm; wing 2.8 mm by 0.7 mm. Eyes broadly contiguous below; face obliterated except narrow brown pollinose triangle above; front dark brownish green slightly dulled with pollen. Palpus small, on tips showing brown with small black apical seta; proboscis dark brown. Antenna dark brown; segments all short; segment 3 ca. 1.5 times higher than long, rather truncate; arista inserted in slight apical sinus, about as long as face. Lower postocular setae brown.

Thorax with mesoscutum and scutellum dark shining green, very slightly brownish pollinose; pleura mostly dark brown; acrostichals biseriata; 6 pairs of distinct dorsocentrals, anterior pair slightly smaller; scutellum with hair on lateral margin; humerals very strongly convergent; small brown seta above fore coxa.

Legs mostly pale; coxae, apical  $1/3$  of hind femur, fore and middle tarsi from tip of basitarsus and hind leg from tip of tibia brown. Hairs on dark parts of legs and on posterior surfaces of fore and middle tibiae and basitarsi brown, all but ventral hairs of hind tibia brown. Setae of fore coxa rather coarse, not longer distally. White of femora and their hairs very prominent; series of longer, more erect pale hairs anteroventrally on fore femur and distally on middle femora, posteroventrally on hind femur, brown series posteroventrally near tips of fore and middle femora with 1 very prominent seta on latter, similar series near tip of hind femur. Tibia I with small anterodorsal near  $1/4$ , only small apicals; tibia II with 2 distinct anterodorsals at  $1/5$  and  $2/5$ , the basal one very large, 2 distinct posterodorsals at  $1/4$  and  $1/2$ , 4 apicals with lower 2 larger; tibia III with distinct anterodorsals at  $1/4$  and beyond  $1/2$  the basal one larger, 3 distinct posterodorsals at  $1/4$ ,  $1/2$ , and  $2/3$ , 2 or 3 indistinct slender ventrals, 3 distinct apicals. Relative lengths of tarsal segments from base as tarsus I, 12-5-4-2-3; tarsus II, 16-6-4-3-4; tarsus III, 10-8-4-3-4.

Wing elliptical; clear, veins brown. Vein 1 reaching  $2/5$  length of wing; vein 2 essentially straight; vein 3 and last of vein 4 curving slightly backward, essentially parallel. Crossvein nearly  $1/2$  as long as



last of vein 5. Calypter, setae, and halter brown.

Abdomen gradually tapering, brown; setae brown; marginal setae of tergites not prominent, 2 or less times as long as hairs, tergite 6 narrow and setose. Hypopygium brown with 8–10 small erect setae posteriorly; lamellae small, oval, brown, with numerous short pale hairs.

**FEMALE.**—Face ca. 2.5 times as high as wide with nearly straight sides, violet covered with grayish white pollen; clypeus forming lower 1/3 of face, lower margin straight. Palpus broad, pale brown with scattered brownish setae. Lower 1/4 or less of postocular setae pale. Femora mostly yellow to slightly brownish, without series of longer pale hairs, hind femur with distal 1/2 to 2/3 brown. Knob of halter yellow.

**TYPE DATA.**—Holotype ♂, allotype ♀, 11 ♂ and 8 ♀ paratypes from Dominica: Boeri Lake trail 22 Feb 1964 H. Robinson (USNM 72912). Additional paratypes from Dominica: 7 ♂ and 1 ♀ 21–23 Feb 1964 H. Robinson, 2 ♀ 21 Feb 1964 D. F. Bray, 4 ♂ 21 Jan, 1 ♂ 6 Mar 1965 W. W. Wirth, all Freshwater Lake; 1 ♂ Fond Figue River 25 Jan, 1 ♂ South Chiltern Estate 2 Feb, 2 ♂ Pont Casse 1.5 miles north 12 Feb, 1 ♂ Clarke Hall 11–20 Mar, 1 ♂ Dleau Gommier 16 Mar 1965 W. W. Wirth; 1 ♂ Pont Casse 1.5 miles west 3 Apr 1965 D. R. Davis; 1 ♂ Pont Casse 2 miles east 10 Apr 1966 R. J. Gagné.

**REMARKS.**—The new species seems most closely related to *Chrysotus pseudoniger*, new species, with which it shares most basic structural features. *Chrysotus albihirtipes* is easily distinguished by the pale femora with prominent white hairs in the male.

### Genus *Diaphorus* Meigen

Small to medium sized, metallic green usually with black bristles. Face broad with straight sides, usually obscured or opaque with pollen, narrow clypeus of male turned under and not visible; front obliterated by contiguous eyes or of various widths to broader than face. Pseudotracheae geminately sclerotized. Antenna with segment 1 bare above, truncate apically; segment 2 usually truncate at tip; segment 3 slightly to greatly enlarged, sometimes projecting under segment 2; arista subapical or in apical notch. Postocular setae multiseriate in distinct rows or essentially uniseriate.

Thorax with mesoscutum rather evenly rounded; acrostichals small, biseriate or uniseriate; 5 or 6 pairs of distinct dorsocentrals; scutellum with 2 large bristles, usually a small seta on lateral margin; 1 or 2 small setae above fore coxa. Fore and middle coxae with numerous hairs anteriorly, larger hairs or bristles distally; middle and hind coxae with a distinct bristle nearer base. Femora without distinct preapicals. Pulvilli often enlarged.

Wings oblong-oval. Costa reaching tip of vein 4; vein 3 slightly to distinctly diverging from vein 2, straight or curving backward distally but remaining nearly parallel to vein 4; vein 4 ending in wing apex; crossvein shorter than last of vein 5; vein 6 short or represented by slight fold.

Abdomen as long as or slightly longer than thorax, cylindrical or slightly tapering, tergites with marginal setae variably distinct. Hypopygium capping tip of preabdomen, upper surface arched, capsule or tergite 6 of preabdomen often bearing prominent bristles; appendages short. Female genitalia with crest of dornen above.

The genus is widely distributed in the world with a number of widely ranging species. Some of the species are common on lower foliage and are often taken in sweepings. The genus contains a number of diverse elements of which three are evident on Dominica. The first four species listed, including *D. spectabilis*, are more closely related to the subgenus *Lyroneurus*. The two species *D. flavipes* and *D. parvulus* are sometimes placed in the genus *Chrysotus*. The last four species represent the typical element of the genus as it is recognized in Europe. A prominent but not very phyletically important character, yellow femora, is found in both species of the second group and the first two species of the last group. The ten species known from Dominica can be distinguished by the key (p. 92).

### *Diaphorus spectabilis* Loew

*Diaphorus spectabilis* Loew, 1861a:57.

*Diaphorus exunguis* Thomson, 1869:506.

*Diaphorus approximatus* Aldrich, 1896:321.

**MALE.**—Length 3.3–4.5 mm; wing 3.2–4.0 mm by 1.2–1.6 mm. Face slightly to distinctly recessed, slightly higher than wide, dark gray pollinose. Front obliterated by contiguous eyes. Palpus brown with short dark setae; proboscis black. Antenna

black; segments 1 and 2 short; segment 3 half as long as high, broadly rounded or truncate apically with arista in median sinus. Lower postocular setae multiseriate, white.

Thorax moderately gibbous, mesoscutum metallic green dulled above with slight brown pollen; pleura more brown below with thicker grayish pollen; acrostichals indistinctly biseriate; 6 pairs of dorsocentrals; 2 pale setae over fore coxa.

Coxae, femora except extreme tips, fore tarsus from tip of basitarsus, middle tarsus except bases of first four segments, and hind tarsus from middle of basitarsus brown; tibiae, apical 1/10 to 1/8 of fore and middle femora, and bases of tarsi yellow. Hairs and bristles black. Setae on anterior surface of fore coxa numerous, prominent, erect, black, slightly longer toward outer edge. Femora with a few large ventral setae at tips; femur I with a series of longer posteroventrals and rather erect, shorter anteroventrals. Tibia I with very small anterodorsal near base; tibia II with 1 distinct anterodorsal, some-

times an indistinct small posterodorsal or posteroventral near 3/5, 3 apicals with 2 rather long; tibia III with usually 2 small anterodorsals near 1/6 and 3/5, posterodorsal series variously enlarged with 6 or more longer than width of tibia. Tarsi with pulvilli enlarged, those of tarsus I slightly longer and those of tarsi II and III slightly less than length of 5th tarsal segments; relative lengths of tarsal segments from base as tarsus I, 15-7-4-3-2; tarsus II, 17-8-5-3-2; tarsus III, 11-9-5-3-2.

Wing rather broadly oblong-elliptical; clear with brownish tinge, veins brown. Vein 1 reaching 2/5 length of wing; vein 2 essentially straight; vein 3 and last of vein 4 nearly parallel, vein 3 more strongly curved. Crossvein ca. 3/4 as long as last of vein 5. Calypter and knob of halter yellow, setae of former pale brownish or yellowish with pale reflections.

Abdomen metallic green with very slight yellowish pollen; pale hairs on only basal 2 or 3 sternites; marginal bristles of tergites twice or three times as

### Key to the Species of *Diaphorus* in Dominica

1. Thorax with 6 pairs of large dorsocentrals; tergite 6 of male abdomen with ca. 7 large marginal bristles ..... 2  
 Thorax with 5 pairs of large dorsocentrals, anterior 6th pair smaller or lacking; tergite 6 of male abdomen bare or nearly so ..... 5
2. Palpus dark; male head with front obliterated by contiguous eyes ..... *D. spectabilis*  
 Palpus mostly or wholly yellow; male head with front constricted only in middle ..... 3
3. Fore coxa with only white hairs; front partly greenish with yellowish pollen ..... *D. angustifrons*  
 Fore coxa with black setae distally; front mostly obscured by gray pollen ..... 4
4. Fore coxa and femur mostly yellow ..... *D. wirthi*  
 Fore coxa and femur mostly brown or greenish ..... *D. robustus*
5. Setae of calypter pale; antennal segment 3 with arista from middle of apical margin; tergite 6 of male with small seta on each side ventrally; hypopygium with only rather small setae ..... 6  
 Setae of calypter brown or black; antennal segment 3 with arista from near upper corner; tergite 6 of male completely bare; hypopygium usually with 4 large bristles ..... 7
6. Middle tibia with very small anterodorsal near base scarcely as long as width of tibia; front of male obliterated by contiguous eyes ..... *D. flavipes*  
 Middle tibia with distinct anterodorsal near base; front of male as wide as face ..... *D. parvulus*
7. Lower postocular setae white; femora mostly pale; knob of halter yellow; tibia II with large anterodorsals ..... 8  
 Lower postocular setae black; femora except tips brown; knob of halter brown; tibia II with only small setae ..... 9
8. Tip of hind femur dark; tibia III with 3 large anterodorsals; tergites 2 and 3 of male abdomen yellow ..... *D. dimidiatus*  
 Hind femur wholly yellow; tibia III with only 1 distinct anterodorsal; abdomen completely dark ..... *D. mundus*
9. Tibiae pale; wings pale; face and pleura with grayish pollen; male hind femur with distinct series of posteroventrals ..... *D. contiguus*  
 Legs wholly brown; wings brownish tinged; face and pleura with brown pollen; male hind femur without distinct series of posteroventrals ..... *D. nigricans*

long as dorsal hairs, tergite 6 with ca. 7 very prominent, long marginal bristles. Hypopygium brown, without large setae posteriorly; lamellae small, brownish with pale short hairs.

**FEMALE.**—Face twice as high as wide, clypeus forming lower  $2/5$ ; front as wide as face with straight sides, grayish pollinose like face. Fore coxa with small pale hairs on anterior surface with larger darker setae distally; fore femur without longer posteroventral series; all tibiae with anterodorsals larger; tibia II with 3 very small posterodorsals at  $1/5$ ,  $2/5$ , and  $3/5$ , 4 apicals.

**COLLECTION DATA.**—Dominica: 1 ♂ along Roseau River 1 mile above Roseau 23 July 1963 O. S. Flint; 8 ♂ 24 Jan–27 Mar 1964 H. Robinson, 1 ♂ and 7 ♀ 3 Oct–16 Dec 1964 P. J. Spangler, 4 ♂ and 7 ♀ malaise trap 8 Jan–29 Feb, 1 ♂ 11–20 Jan, 1 ♂ cocoa trail 18 Jan, 9 ♂ and 2 ♀ light trap 11 Feb–20 Mar 1965 W. W. Wirth, 1 ♂ and 1 ♀ 6–10 Apr 1966 R. J. Gagné, 6 ♂ 22 May–7 June 1966 G. Steyskal, 6 ♀ 10 Oct 1966 A. B. Gurney, all Clarke Hall; 1 ♂ South Chiltern Estate 7 Feb 1964 H. Robinson; 1 ♂ 13 Mar 1964 H. Robinson, 1 ♀ 4 Sept 1965 D. L. Jackson, both Grand Bay; 2 ♀ Fond Colet 5–9 Oct 1964 P. J. Spangler; 1 ♀ Layou River mouth 6 Feb, 1 ♂ light trap 23 Feb, 1 ♂ Cabrit Swamp 22–25 Mar, 1 ♂ Macoucheri, river mouth 15 Mar 1965 all W. W. Wirth; 1 ♀ Coulibistri 30 Oct 1966 A. B. Gurney.

**REMARKS.**—The species is very widely distributed, ranging from eastern North America southward through Mexico, Central America, and the West Indies to Argentina in South America. The species is one of the most variable of the family in the size of the adult.

#### *Diaphorus angustifrons*, new species

**MALE.**—Length 2.8 mm; wing 2.8 mm by 0.9 mm. Face not recessed, slightly higher than wide, white pollinose; front as narrow as ocellar triangle in the middle, becoming wider above and below, metallic green dulled with yellow pollen. Palpus yellow with white pollen, a few black setae; proboscis black. Antenna black; segments 1 and 2 short; segment 3 half as long as high, rather truncate with arista apical in shallow median sinus. Lower postocular setae multiseriate, white.

Thorax moderately gibbous, metallic green, dulled above with slightly yellowish pollen; thicker

whitish pollen on pleura; acrostichals biseriate; 6 pairs of dorsocentrals; 2 or 3 pale setae over fore coxa.

Legs with coxae and femora mostly metallic greenish; tip of fore coxa with trochanter, apical  $1/5$  of fore and middle femora, extreme tip of hind femur, tibiae, and bases of basitarsi yellow; tarsi brown from middle or tips of basitarsi. Hairs of coxae white, those of fore coxa prominent without bristles distally, bristle of middle coxa pale, bristle of hind coxa black; hairs and bristles of legs otherwise black. Femora with only the slightly longer series of setae posteroventrally. Tibia I with only very indistinct anterodorsal near base; tibia II with small anterodorsal near  $1/5$ , 2 slightly larger apicals; tibia III with 1 small anterodorsal near  $1/5$ , 4 small posterodorsals at  $1/5$ ,  $2/5$ ,  $3/5$ , and  $4/5$ , 2 or 3 small apicals. Tarsi with pulvilli only slightly enlarged, that of tarsus I to  $1/2$  as long as 5th segment; relative lengths of tarsal segments from base as tarsus I, 13–6–4–3–2; tarsus II, 15–7–4–2.5–2; tarsus III, 10–7–5–3–2.

Wing oblong-elliptical; clear, veins brown. Vein 1 reaching slightly over  $1/3$  length of wing; vein 2 straight; vein 3 and last of vein 4 parallel, curving slightly backward. Crossvein  $2/3$  as long as last of vein 5. Calypter, setae, and knob of halter pale.

Abdomen metallic green dulled by slight yellowish pollen; pollen and hairs of sides of tergites 1–3 and sternites white; marginal bristles of most tergites rather small, tergite 6 with 6 or 7 long marginal setae. Hypopygium black, without large setae posteriorly; lamellae small, brown with short white hairs.

**FEMALE.**—Face and front of equal width with straight sides, face 1.5 times as long as wide, clypeus forming lower  $2/5$ ; palpus  $2/3$  yellow. Femur I without series of posteroventrals; tibia II with 2 small anterodorsals at  $1/5$  and  $1/2$ , 3 smaller posterodorsals at  $1/5$ ,  $2/5$ , and  $3/5$ , 1 or 2 indistinct posteroventrals, 3 or 4 apicals with those below large; tibia III with 1st anterodorsal larger and 2nd rather large at  $2/3$ ; pulvilli not enlarged.

**TYPE DATA.**—Holotype ♂, 14 ♂ and 11 ♀ paratypes from Dominica: Layou River mouth 8 Mar 1965 W. W. Wirth (USNM 72913). Allotype ♀ and 1 ♀ paratype from Dominica: same locality 9 Jan 1965 W. W. Wirth. Additional paratypes from Dominica: 4 ♂ and 10 ♀ near Layou 27 Jan–12 Feb 1964 H. Robinson; 7 ♂ 9 Jan, 3 ♀ 6 Feb, 10

♂ and 13 ♀ 18–24 Mar 1965 all Layou River mouth, W. W. Wirth; 1 ♀ Fond Colet 5–9 Oct 1964 P. J. Spangler; 1 ♂ Macoucheri, seashore 1 Feb 1965 W. W. Wirth; 2 ♀ light trap 21–31 Mar 1965 W. W. Wirth, 1 ♂ 4 June 1966 G. Steyskal all Clarke Hall.

REMARKS.—The new species is closely related to *Diaphorus spectabilis* Loew but differs by the pale palpus and the distinctly separated eyes of the male. Other related local species differ in having black setae on the fore coxa.

### *Diaphorus wirthi*, new species

MALE.—Length 3.4 mm; wing 3.2 mm by 1.2 mm. Face scarcely recessed at edges, 1.5 times as high as wide; front as narrow in middle as ocellar triangle, becoming wider above and below; face and front silvery white pollinose. Palpus narrow, whitish with a few short black setae; proboscis brown. Antenna black; segments 1 and 2 short; segment 3 slightly shorter than high, rather truncate with arista in shallow apical sinus. Lower postocular setae multiseriate, white.

Thorax moderately gibbous, metallic green, slightly dulled above with brownish pollen; pleura with thicker grayish pollen; acrostichals indistinctly biseriate; 6 pairs of dorsocentrals; 2 pale setae above fore coxa.

Most of fore leg and middle and hind tibiae yellow; middle and hind coxae and base of fore coxa, hind femur and basal 1/2 of middle femur, fore and middle tarsi from tip of basitarsus, and hind leg from tip of tibia brownish. Hairs and bristles black. Pale hairs on anterior surface of fore coxa, longer black setae toward outer side and tip. Series of somewhat longer setae toward tips postero-ventrally on fore and middle femora and antero-ventrally on femur III; a few longer, rather erect setae posteriorly near base of femur III. Tibia I with 1 small anterodorsal near 1/4; tibia II with 1 rather large anterodorsal near 1/6, 2 small posterodorsals near 1/6 and 1/2, sometimes very small postero-ventral near 3/5, 4 apicals with upper 2 small; tibia III with 2 distinct anterodorsals near 1/5 and smaller one near 1/2, usually 4 posterodorsals as long as width of tibia, 3 distinct apicals. Relative lengths of tarsal segments and pulvilli from base as tarsus I, 17–8–6–4–3 pulvilli 3; tarsus II, 19–9–6–3–2 pulvilli 2; tarsus III, 12–10–7–4–2 pulvilli 2.

Wing rather oblong; clear, veins brownish yellow. Vein 1 reaching ca. 3/8 length of wing; vein 2 straight; vein 3 and last of vein 4 curving slightly backward distally, vein 3 slightly more curved and completely parallel with vein 4 only at extreme tip. Crossvein ca. 3/5 as long as last of vein 5. Calypter and knob of halter yellow, setae of former pale brownish.

Abdomen metallic green with very slight yellowish pollen; only a few pale hairs on basal sternites; marginal bristles of tergites very strong, tergite 6 with ca. 8 very prominent, longer marginal bristles. Hypopygium brown, capsule without large setae posteriorly; lamellae small, brownish with fine pale setae.

FEMALE.—Unknown.

TYPE DATA.—Holotype ♂ from Dominica: Clarke Hall, malaise trap 21–31 Mar 1965 W. W. Wirth (USNM 72914). Paratype from Dominica: 1 ♂ Clarke Hall 12–17 Nov 1964 P. J. Spangler.

REMARKS.—The new species is very close to the following *Diaphorus robustus* but differs by the fore coxa and fore femur being yellow and by the face and front being more silvery pollinose.

### *Diaphorus robustus*, new species

MALE.—Length 3.5–4.8 mm; wing 3.2–4.5 mm by 1.2–1.6 mm. Face scarcely recessed, 1.5 times as high as wide, gray pollinose; front as narrow in middle as ocellar triangle, becoming wider above and below, with thick, yellowish gray pollen. Palpus yellow with a few black setae; proboscis black. Antenna black; segments 1 and 2 short; segment 3 half as long as high, rather truncate with arista in shallow apical sinus. Lower postocular setae multiseriate, white.

Thorax moderately gibbous, metallic bluish green, dulled above with slight brown pollen; pleura with thicker grayish pollen; acrostichals biseriate, close; 6 pairs of dorsocentrals; 2 or 3 pale setae above fore coxa.

Most of coxae and femora, fore and middle tarsi from tip of basitarsus, and hind leg from tip of tibia or base of basitarsus brown; tip of fore coxa with trochanter, apical 1/5–1/4 of femora I and II, extreme tip of femur III, tibiae and bases of at least fore and middle tarsi yellow. Most hairs and bristles black. Pale hairs on anterior surface of fore coxae, black setae or bristles toward outer side and

tip. Femora with a few larger ventral setae at tips, femur I with series of longer posteroventrals and rather erect, shorter series near base anteroventrally. Tibia I with very small, indistinct anterodorsal near base; tibia II with large anterodorsal near 1/6, another less large near 2/3, 3 very small posterodorsals near 1/6, 1/3, and 2/3, 2 posteroventrals, not as small, near 1/3 and 2/3, 4 large apicals; tibia III with 2 large anterodorsals at 1/3 and 3/5, 3 rather large posterodorsals at 1/5, 1/2, and 3/4, 4 apicals with posterodorsal largest. Relative lengths of tarsal segments from base as tarsus I, 25-10-7-5-3 pulvilli 3; tarsus II, 28-13-7-5-3; tarsus III, 17-15-9-4-3.

Wing rather oblong; clear with yellow tinge, veins brown. Vein 1 reaching slightly over 1/3 length of wing; vein 2 straight; vein 3 and last of vein 4 nearly parallel, 3rd more strongly curved; vein 4 ending rather far back near hind corner of rather oblong wing. Crossvein only slightly shorter than last of vein 5. Calypter and knob of halter yellow, setae of former pale brownish with pale reflections.

Abdomen metallic green with very slight yellowish pollen; only a few pale hairs on basal sternites; marginal bristles of tergites very strong, tergite 6 with ca. 8 very prominent, longer marginal bristles. Hypopygium brown, capsule without large setae posteriorly; lamellae small, pale brownish with fine pale setae.

**FEMALE.**—Face twice as high as wide, clypeus forming lower 1/3; front slightly broader than face with straight sides. Palpus with only apical 1/2 yellow. Fore coxa without larger dark setae along outer edge; femur I without series of longer posteroventrals; tibia I with larger anterodorsal near base, very small, indistinct posterodorsal and posteroventral near 2/3; tibia II with an anterodorsal and the posterodorsal near distal 1/3 as large as associated ventral or larger; tibia III with some additional slightly enlarged setae along posterodorsal and posteroventral rows; pulvilli not enlarged.

**TYPE DATA.**—Holotype ♂, 1 ♂ and 1 ♀ paratypes from Dominica: Clarke Hall 19-20 Feb 1964 H. Robinson (USNM 72915). Allotype ♀ from Dominica: Clarke Hall 29 Jan 1964 H. Robinson.

**REMARKS.**—The new species has the general appearance of *Diaphorus spectabilis* Loew but differs by the pale palpus and the dark bristles on the fore coxa. The wing of the species also seems

rather distinctive by the apex with the tips of the third and fourth veins shifted somewhat backward.

### *Diaphorus flavipes* Aldrich

*Diaphorus flavipes* Aldrich, 1896:323.

**MALE.**—Length 2.4-2.6 mm; wing 2.8 mm by 1.0 mm. Face recessed, very small, about as high as upper width and slightly narrowed below, metallic green almost completely obscured by yellowish white pollen; front obliterated by broadly contiguous eyes. Palpus narrowly oval, pale yellow with short black apical seta; proboscis dark yellow. Antenna brown; segments 1 and 2 short; segment 3 truncated-triangular, only 2/3 as long as high, arista from median-apical sinus. Lower postocular setae biseriate with inner row very prominent, pale.

Thorax rather gibbous, metallic bluish green dulled with grayish pollen which is thicker on pleura; acrostichals biseriate; 5 pairs of large dorso-centrals, 6th anterior pair small; 2 small pale setae above fore coxa.

Legs mostly yellow; most of middle coxa, base of hind coxa, and 5th segments of tarsi brown. Hairs and bristles mostly brown. Fore coxa with scattered pale to brownish hairs anteriorly, paler hairs distally. Few longer ventral setae distally along posteroventral surfaces of fore and middle femora; 1 or 2 pale erect basal setae anteriorly and posteriorly on femur III. Tibia I without distinctive setae; tibia II with 1 very small anterodorsal near base scarcely as long as width of tibia, trace of posterodorsal near 1/2, 2 distinct apicals; tibia III with 1 small anterodorsal near 1/4 or 1/5, 3 small posterodorsals at 1/2, 3/4, and tip, very small, indistinct posterodorsal near 1/6. Tarsi with pulvilli somewhat enlarged, on tarsus I as large as segment 5, tarsi II and III less enlarged; relative lengths of tarsal segments from base as tarsus I, 13-6-4-2-2.5; tarsus II, 15-7-4-2-2; tarsus III, 8-8-5-2.5-2.5.

Wing broadly elliptical; clear, veins brownish yellow. Vein 1 reaching 5/13 length of wing; veins 2 and 3 curving very slightly backward; vein 3 nearly parallel with last of vein 4. Crossvein 2/3 as long as last of vein 5. Calypter, setae, and halter pale.

Abdomen metallic green, often with coppery reflections above, sides of tergite 2 and basal sternites rather pale; hairs and bristles of tergites black.



longer hairs of sternites white to pale brownish; marginal bristles of tergites not very prominent, ca. twice as long as hairs, tergite 6 bare except for 1 small marginal seta at each lower angle. Hypopygium brown with 5 or 6 small dark setae posteriorly; lamellae small, pale, triangular with short pale hairs.

**FEMALE.**—Face 1.5 times as high as wide, bluish green with whitish pollen thicker toward sides, clypeus forming lower  $2/5$  of face; front as wide as face, bluish green dulled with whitish pollen; palpus broader with more black setae. Femora without series of longer setae posteroventrally, without long setae at base of hind femur; pulvilli not enlarged.

**COLLECTION DATA.**—Dominica (only males listed): 8 ♂ Antrim, 1000' 12 Mar, 1 ♂ Dleau Gommier 17 Mar 1956 J. F. G. Clarke; 1 ♂ Springfield Estate 20–26 July 1963 O. S. Flint; 2 ♂ Rosalie River 28 Jan, 1 ♂ North Deux Dleau River 28 Jan, 1 ♂ near Belfast 31 Jan 1964 H. Robinson; 3 ♂ 4–17 Feb, 1 ♂ 8 Mar 1964 H. Robinson, 7 ♂ 3–8 Oct 1964 P. J. Spangler, 2 ♂ 11–20 Jan, 6 ♂ light trap 21 Jan–20 Feb, 1 ♂ 11–20 Mar 1965 W. W. Wirth, 12 ♂ 19 Apr–8 May 1966 R. J. Gagné, 6 ♂ 15 May–10 June 1966 G. Steyskal, all Clarke Hall; 3 ♂ 6–7 Feb 1964 H. Robinson, 2 ♂ 2 Feb, 1 ♂ 20 Feb 1965 W. W. Wirth, all South Chiltern Estate; 1 ♂ Pont Casse 16 Feb 1964 H. Robinson; 3 ♂ rain forest 25 Jan–3 Feb, 1 ♂ light trap 13 Mar 1965 W. W. Wirth, 1 ♂ 12 Apr 1966 R. J. Gagné, all Fond Figues River; 1 ♂ Pont Casse 1.5 miles north 12 Feb 1965 W. W. Wirth; 2 ♂ 27 Mar, 2 ♂ 13 Apr 1966 R. J. Gagné, Tareau Cliffs, La Fanchette; 4 ♂ trail, 1 mile north junc. rds. to Rosalie and Castle Bruce, 1300' 29 Mar 1966 R. J. Gagné.

**REMARKS.**—The species has been reported from the Lesser Antilles and from South America. It is very closely related to *Diaphorus parvulus* Aldrich in spite of the basic difference in the approximation of the eyes.

### *Diaphorus parvulus* Aldrich

*Diaphorus parvulus* Aldrich, 1896:321.

*Chrysotus longipes* Van Duzee, 1927b:1.

**MALE.**—Length 2.0–2.4 mm; wing 2.4 mm by 0.9 mm. Face slightly higher than upper width, slightly narrowed below, covered with gray pollen,

clypeus often visible as narrow flange at oral margin; front as wide as face, slightly wider above and below, bluish dulled with slight whitish pollen. Palpus narrowly oval, yellow with a few short black setae, apical seta largest; proboscis dark yellow or yellowish brown. Antenna brown; segments 1 and 2 short; segment 3 truncated-triangular, only  $2/3$  as long as high, arista from median-apical sinus. Lower postocular setae biseriate with inner row very prominent, pale.

Thorax rather gibbous, metallic bluish green dulled with yellowish pollen above; pleura more brownish with thicker grayish pollen; acrostichals biseriate; 5 pairs of large dorsocentrals, 6th anterior pair very small; 1 or 2 small pale setae above fore coxa.

Legs mostly yellow; most of middle coxa, base of hind coxa, and 5th tarsal segments brown. Hairs and bristles mostly brown. Fore coxa with scattered pale to brownish setae anteriorly, paler distally. Few longer ventral setae distally along posteroventral surfaces of fore and middle femora, 1 or 2 pale erect basal setae anteriorly and posteriorly on hind femur. Tibia I without distinctive setae; tibia II with 1 distinct anterodorsal near basal  $1/5$  twice or more as long as width of tibia, 2 distinct apicals; tibia III with 1 very small anterodorsal near  $1/5$ , 5 or 6 indistinct to small posterodorsals with largest at  $3/5$  and tip, 2 other short apicals below. Tarsi with pulvilli somewhat enlarged, on tarsus I as long as 5th segment, less enlarged on tarsi II and III; relative lengths of tarsal segments from base as tarsus I, 13–5–3–2–2; tarsus II, 15–6–4–2–2; tarsus III, 9–8–5–3–2.

Wing broadly elliptical; clear, veins brownish yellow. Vein 1 reaching about  $1/3$  length of wing; veins 2 and 3 nearly straight; vein 3 nearly parallel with last of vein 4. Crossvein ca.  $3/5$  as long as last of vein 5. Calypter, setae and halter pale.

Abdomen metallic green often with coppery reflections above, sides of tergite 2 and basal sternites rather pale; hairs and bristles of tergites black, a few long, pale hairs on sternites; marginal bristles of tergites not prominent, ca. twice as long as hairs, tergite 6 bare except for 1 small marginal seta at each lower angle. Hypopygium brown with 4 or 5 small dark setae posteriorly; lamellae small, pale, triangular, with short pale hairs.

**FEMALE.**—Face 1.5 times as high as wide, bluish green with whitish pollen thicker toward sides,

clypeus forming lower  $2/5$ ; front as wide as face, bluish green dulled with yellowish white pollen; palpus broader with more black setae. Femora without series of longer setae distally, without long setae at base of hind femur; pulvilli not enlarged.

COLLECTION DATA.—Dominica (all males): 3 ♂ 17 Mar 1956 J. F. G. Clarke, 2 ♂ 13 May 1966 G. Steyskal, all Dleau Gommier; 7 ♂ 23 Jan–17 Feb 1964 H. Robinson, 3 ♂ 3 Oct–17 Nov 1964 P. J. Spangler, 1 ♂ cocoa trail 16 Feb, 6 ♂ 8 Jan–20 Mar 1965 W. W. Wirth, 6 ♂ 3 Apr–8 May 1966 R. J. Gagné, 16 ♂ 11 May–7 June 1966 G. Steyskal, 1 ♂ 11 Oct 1966 A. B. Gurney, all Clarke Hall; 3 ♂ Rosalie River 28 Jan, 2 ♂ La Ronde River 15 Feb 1964 H. Robinson; 1 ♂ 23 Feb 1964 H. Robinson, 1 ♂ Pont Casse 1.6 miles west 24 Apr 1964 O. S. Flint; 1 ♂ 21 Jan 1965 W. W. Wirth, 1 ♂ 15 Oct 1966 A. B. Gurney, all Freshwater Lake; 8 ♂ Pont Casse 2.5 miles east, stream margin 16 Jan, 1 ♂ Sylvania, grassy marsh 25 Jan, 1 ♂ South Chiltern Estate 2 Feb, 1 ♂ Pont Casse 1.5 miles north 12 Feb, 5 ♂ Cabrit Swamp, light trap 23 Feb, 1 ♂ Woodford Hill, swamp forest 27 Feb 1965 all W. W. Wirth; 1 ♂ 2 Apr 1965 D. R. Davis, 1 ♂ 8–13 Oct 1966 A. B. Gurney, Pont Casse; 1 ♂ Tareau Cliffs, La Fanchette 27 Mar, 1 ♂ trail, 1 mile north junc. rds. to Rosalie and Castle Bruce, 1300' 29 Mar, 2 ♂ Pont Casse 0.2 mile east 10 Apr, 2 ♂ Fond Figue River, 400' 29 Apr 1966 R. J. Gagné.

REMARKS.—The species is known from the Lesser Antilles and Puerto Rico. It was the most commonly collected member of the family during the Biological Survey of Dominica. The species often is taken in the same habitats frequented by the closely related *Diaphorus flavipes*. The males of the two species are easily distinguished by the form of the eyes and the length of the anterodorsal of the middle tibia. There is no certain distinction known between the females of the two species.

### *Diaphorus dimidiatus* Aldrich

*Diaphorus dimidiatus* Aldrich, 1896:322.

MALE.—Length 2.9 mm; wing 2.8 mm by 1.0 mm. Face recessed, about as high as upper width, narrowed below to  $1/2$  to  $2/3$  of upper width, covered with white pollen; front as wide as upper face with straight sides, pale bluish green dulled with

whitish pollen. Palpus narrow, yellow with small black setae; proboscis brown. Antenna brown; segments 1 and 2 short; segment 3 about 1.5 times as high as long, rather truncate; arista apical near upper corner. Lower postocular setae multiseriate, white.

Thorax pale metallic bluish green dulled with whitish or yellowish white pollen; pleura with thicker grayish pollen; acrostichals biseriate; 5 pairs of dorsocentrals; 1 longer black seta over fore coxa.

Legs mostly yellow; middle and hind coxae and 5th segments of tarsi brown; tip of hind femur and tips of middle and hind tarsal segments infuscated. Hairs and bristles black. Fore coxa with small hairs anteriorly and longer bristles along outer and distal edge. Femora without longer setae ventrally except at tips. Tibia I with 1 small anterodorsal near  $1/4$ , 1 small apical posteroventrally and 3 or 4 other small indistinct apicals; tibia II with 2 large anterodorsals near  $1/5$  and  $1/2$ , small posterodorsals near  $1/5$  and  $1/2$ , small ventrals near  $1/3$  and  $2/3$ , 4 apicals; tibia III with 3 rather large anterodorsals near  $1/6$ ,  $2/5$ , and  $2/3$ , 2 rather large posterodorsals near  $2/5$  and  $2/3$ , smaller posterodorsals near  $1/6$ ,  $1/3$ , and  $1/2$ , some very small, indistinct ventrals, 4 distinct apicals. Relative lengths of tarsal segments and pulvilli from base as tarsus I, 13–5–3–2–3, pulvilli twice as long as last segment; tarsus II, 15–6–4–2–2, pulvilli nearly twice as long as last segment; tarsus III, 11–9–6–4–3, pulvilli scarcely enlarged.

Wing elliptical; clear, veins dark yellow. Vein 1 reaching  $3/7$  length of wing; vein 2 very slightly sinuous; vein 3 and last of vein 4 parallel, curving very slightly backward. Crossvein  $2/3$  as long as last of vein 5. Calypter and halter yellow, setae of former brown.

Abdomen with tergites and sternites 2 and 3 yellow, other tergites metallic green; hairs and bristles black; marginal bristles of tergites about 3 times as long as hairs, tergite 6 bare. Hypopygium brown with 4 large bristles posteriorly; lamellae small with rather pale, short hairs.

FEMALE.—Face as wide as high, clypeus forming lower  $1/2$ ; front as wide as face; face and front metallic bluish green obscured with whitish pollen; palpus larger and broader, yellow with small black setae and a more distinct apical seta. Legs mostly yellow with basal  $1/2$  of middle femur and

distal 1/3 of hind femur blackish; pulvilli not enlarged.

**COLLECTION DATA.**—Dominica: 1 ♂ and 2 ♀ Clarke Hall 24 Jan–17 Feb 1964 H. Robinson.

**REMARKS.**—The species has been reported from the Lesser Antilles and Mexico. The female has not been reported in the literature. The specimens cited seem definite, being in very good agreement in the 3 large anterodorsals of the hind tibia and in all other bristles of the legs. The male and one female were taken in the same taro bog, though in different parts of the same day. The difference in the femur color seems unusual since the legs of female Dolichopodidae often are paler than the male but rarely darker.

### *Diaphorus mundus* Loew

*Diaphorus mundus* Loew, 1861a:57.

**MALE.**—Length 3.0 mm; wing 3.1 mm by 1.2 mm. Face distinctly recessed, as high as wide, metallic bluish dulled with slight whitish pollen; front obliterated by contiguous eyes. Palpus yellow with black setae, 1 distinct, larger black apical seta; proboscis brown. Antenna brown; segments 1 and 2 short; segments 3 about 1.5 times as high as long, rather truncate; arista apical near upper corner. Lower postocular setae multiseriate, white.

Thorax bright metallic green with very slight yellowish pollen; pleura with more grayish yellow pollen; acrostichals biseriate; 5 pairs of dorso-centrals; 1 distinct black seta above fore coxa.

Legs mostly yellow; middle and hind coxae, extreme base of fore coxa, and 5th segments of tarsi brown. Hairs and bristles black. Fore coxa with small bristles anteriorly, 3 or 4 bristles along distal 2/3 of outer edge. Femur I with series of postero-ventrals, 1 near base and others progressively longer along distal 2/3, series of rather erect, shorter anteroventral setae along basal 2/3; femur II with both anteroventral and posteroventral series of short setae, posteroventral series more distinct; femur III with longer erect setae in 4 ventral rows, 1 anteroventral and 1 posteroventral near base particularly distinct. Tibia I with only very small anterodorsal near 1/5, tibia II with 1 rather large anterodorsal near 1/5, 2nd smaller near 1/2, small posterodorsals near 1/5 and 1/2, distinct ventral near 3/4, 4 apicals; tibia III with 1 rather small

anterodorsal near 1/5, 4 slightly larger postero-ventrals near 1/5, 2/5, 3/5, and 4/5, 4 apicals. Relative lengths of tarsal segments and pulvilli from base as tarsus I, 15–6–4–2–4, pulvilli much enlarged; tarsus II, 15–7–4–3–2, pulvilli moderately enlarged; tarsus III, 10–9–5–4–3, pulvilli scarcely enlarged.

Wing oval with rather broad base; veins yellow. Vein 1 reaching 2/5 length of wing; vein 2 very slightly flexed, very slightly diverging from vein 3; distal parts of veins 3 and 4 nearly parallel, vein 3 curving slightly more. Crossvein 2/3 as long as last of vein 5. Calypter brownish yellow, setae black; halter yellow.

Abdomen metallic green, often more coppery above; setae black with some pale hairs on sternites; marginal bristles of tergites twice or three times as long as hairs, tergite 6 bare. Hypopygium brown with greenish base, with 4 large bristles posteriorly; lamellae pale with short pale setae.

**FEMALE.**—Face 1.5 times as high as wide, clypeus forming lower 2/5; front as wide as face with straight sides; face and front bluish with violet reflections; palpus broader, brownish with apical setae distinct. Femora without series of longer ventral setae; tibia II with small additional antero-dorsal near base, 2nd small ventral near 1/3, sometimes another additional anteroventral or posteroventral.

**COLLECTION DATA.**—Dominica: 3 ♂ and 2 ♀ Clarke Hall 2–21 Mar 1964 H. Robinson; 1 ♀ trail, 1 mile north junc. rds. to Rosalie and Castle Bruce, 1300' 29 Mar, 1 ♀ Pont Casse 0.5 mile east 11 Apr 1966 R. J. Gagné.

**REMARKS.**—The species is widely distributed from Canada and the eastern United States southward through the West Indies to Bolivia in South America.

### *Diaphorus contiguus* Aldrich

*Diaphorus contiguus* Aldrich, 1896:323.

**MALE.**—Length 2.0 mm; wing 2.0 mm by 0.4 mm. Face greatly recessed, about as wide as high, brownish covered with gray pollen; front obliterated by contiguous eyes. Palpus narrow and rather pointed, grayish with yellow tip; proboscis brown. Antenna brown; segments 1 and 2 short; segment 3 rather truncate, about 2/3 as long as high; arista inserted

just below upper edge. Lower postocular setae multiseriate, black.

Thorax very gibbous, dark brown, darker above; pleura with gray pollen; acrostichals biseriate; 5 pairs of dorsocentrals; only a few short black hairs above fore coxa.

Legs with coxae, femora and tarsi from about segment 3 brown; tibiae and bases of tarsi yellow. Hairs and bristles black. Fore coxa with long coarse setae anteriorly, as long as those at tip. Femur I with series of long setae along whole posteroventral surface, most as long as width of femur, shorter series anteroventrally; femur II with posteroventral, posterior, and anterior hairs rather long in distal 1/2; femur III with series of long slender setae posteroventrally, those beyond middle as long as width of femur. Tibia I without bristles; tibia II with only very small bristles, 1 anterodorsal near base, 1 posterodorsal near 2/3, 1 posteroventral near 3/5, 4 apicals; tibia III with small bristles, 1 anterodorsal near 1/4, ca. 3 posterodorsals at 1/6, 1/3, and 1/2, one slightly larger near 2/3, 3 apicals. Relative lengths of tarsal segments and pulvilli from base as tarsus I, 8-4-3-2-2, pulvilli as long as segment 5; tarsus II, 9-5-4-2-2; tarsus III, 7-6-5-3-2.

Wing broadly oval with oblong base; clear, veins brown. Vein 1 reaching 1/2 length of wing; vein 2 nearly straight; vein 3 curving very slightly backward, both nearly parallel with last part of vein 4. Crossvein about 1/2 as long as last of vein 5. Calypter yellowish with slightly darkened margin, setae brown; knob of halter brown.

Abdomen brown with pale brownish pollen, tergites often with reddish tinge; hairs rather prominent, those on sides as long as the short marginal bristles, tergite 6 bare. Hypopygium brown with 3 or 4 large bristles posteriorly; lamellae reduced to small brown hairy knobs; armatures brown with small retrorse tips; median spine curved at tip, yellow.

**FEMALE.**—Face not distinctly recessed, about as wide as high, with grayish brown pollen, clypeus forming lower 1/2; front as broad as face, with straight sides, brown with yellowish brown pollen. Femora without longer ventral setae; pulvilli not enlarged. Wing similar to male but slightly more narrowly oblong at base.

**COLLECTION DATA.**—Dominica: 1 ♂ along Roseau River 1 mile above Roseau 23 July 1963 O. S.

Flint; 5 ♂ near Layou 27-30 Jan 1964 H. Robinson; 1 ♂ 4 Feb 1964 H. Robinson, 2 ♀ malaise trap 11-20 Jan 1965 W. W. Wirth, 1 ♂ 4 June 1966 G. Steyskal, all Clarke Hall; 1 ♂ Pont Casse 2.5 miles east 16 Jan, 1 ♀ South Chiltern Estate 2 Feb, 1 ♂ Woodford Hill, seashore 27 Feb, 1 ♀ Layou River mouth 18-24 Mar 1965 all W. W. Wirth; 1 ♂ and 1 ♀ Cabrit Swamp 10-13 May 1965 D. R. Davis; 1 ♀ east of Pont Casse 13-16 Oct 1966 A. B. Gurney.

**REMARKS.**—The species occurs in maritime regions of the southeastern United States and the West Indies.

### *Diaphorus nigricans* Meigen

*Diaphorus nigricans* Meigen, 1824:33.

*Diaphorus opacus* Loew, 1861a:56.

**MALE.**—Length 2.3-3.0 mm; wing 2.4-3.2 mm by 1.0-1.3 mm. Face distinctly recessed, slightly higher than wide, dark brown with brown pollen; front obliterated by contiguous eyes. Palpus and proboscis dark brown, former with black setae. Antenna dark brown; segments 1 and 2 short; segment 3 ca. 1.5 times as high as long, rather truncate; arista apical near upper corner. Lower postocular setae multiseriate, unusually crowded and without distinct rows, black.

Thorax dark brown, mesoscutum very dark metallic blue-green almost totally obscured by dark brownish pollen; pleura with brown pollen; acrostichals biseriate; 5 pairs of dorsocentrals; only a few short black hairs above fore coxa.

Legs wholly dark brown with black hairs and bristles. Fore coxa with numerous setae, with bristles distally and toward outer edge. Femur I with distinct series of long setae along posteroventral surface; femur II with series of only very short posteroventrals; hairs posteriorly toward tip on femora I and II and anteriorly on femur II rather long. Tibia I without distinctive setae; tibia II with 1 small distinct anterodorsal near 1/5, 3 very small indistinct posterodorsals at 1/5, 2/5, and 3/5, 2 very small, indistinct posteroventrals near 1/3 and 3/5, 3 distinct apicals; tibia III with only distinct anterodorsal near 1/5, 4 small posterodorsals at 1/5, 2/5, 3/5, and 4/5, 4 small apicals. Relative lengths of segments and pulvilli of tarsi from base as tarsus I, 12-5-4-2-2, pulvilli as long

as 5th segment; tarsus II, 12-7-4-3-2, pulvilli slightly enlarged; tarsus III, 8-8-5-3-2, pulvilli not enlarged.

Wing broadly oval with oblong base; brown-tinged, veins brown. Vein 1 reaching  $1/2$  length of wing; vein 2 curving very slightly backward; vein 3 and last of vein 4 nearly parallel, curving slightly backward. Crossvein  $2/3$  to  $3/4$  as long as last of vein 5. Calypter, setae, and halter dark brown.

Abdomen dark brown, slightly reddish brown on tergites; hairs and bristles black; hairs on sides long, marginal bristles of tergites not prominent, tergite 6 bare. Hypopygium brown with 4 long bristles posteriorly; lamellae small, brown with short brown hairs.

**FEMALE.**—Face higher than wide by width of narrow clypeus, grayish pollinose; front as wide as face with straight sides, slightly greenish above covered with yellowish gray pollen. Femora without longer ventral setae; tibia II with 2 indistinct posterodorsals near  $1/5$  and  $3/5$ ; tibia III with only 3 distinct posterodorsals; pulvilli not enlarged.

**COLLECTION DATA.**—Dominica: 1 ♀ Trois Pitons, 4600' 9 Apr 1965 D. R. Davis; 1 ♂ Trafalgar Falls, 1200' 5-6 Apr 1966 R. J. Gagné.

**REMARKS.**—The species was originally described from Europe and has been reported from Maine and Utah in North America south through Mexico and Central America to Argentina in South America. The above description of the female is based on a specimen from the United States.

### Genus *Symbolia* Becker

Medium sized, setae mostly black. Face of male very long and narrow, covered with white pollen; front very small. Palpus brown with a small black apical seta. Antenna inserted at upper  $1/4$  of head; segment 1 usually with hairs above; segment 2 truncate or prolonged above; arista distinctly dorsal. Lower postocular setae uniseriate.

Thorax with mesoscutum rather strongly and evenly arched; acrostichals biseriate, short; 5 pairs of large dorsocentrals; scutellum with 2 strong bristles, hair on lateral margin; a seta above fore coxa. Fore and middle coxae with numerous long black hairs on anterior surface, with bristles distally; hind coxa with strong external bristle. Femora without preapicals dorsally; hind tibia rather stout.

Pulvilli of male fore tarsus each about as large as 5th segment.

Wing with vein 1 reaching about halfway from base to tip of vein 2, ending short of length of discal cell; crossvein perpendicular to base of vein 4, slightly shorter than last of vein 5; vein 6 represented by slight fold.

Abdomen much longer than thorax, cylindrical in male, without metallic color, mostly brown, often with yellow spots laterally; tergum 6 short, usually bare. Hypopygium small, capping tip of preabdomen, brown, bearing a number of distinct setae posteriorly; outer appendages long and slender.

**REMARKS.**—The genus is widely distributed in the Neotropical region with 16 species recognized in the recent revision (Robinson, 1966). The single following species is known from Dominica.

### *Symbolia linearis* (Aldrich)

*Anepsius linearis* Aldrich, 1896:317.

*Sympycnus thoracicus* Van Duzee, 1930b:51.

**MALE.**—Length 2.8 mm; wing 3.0 mm by 1.1 mm. Face extremely narrow, linear, white pollinose; front obscured by grayish pollen. Proboscis brownish yellow. Antenna brown; segment 1 with a few hairs above; segment 2 projecting inside over base of segment 3; segment 3 as long as broad, pointed, arista from middle of dorsal edge. Lower postocular setae pale.

Thorax with mesoscutum and scutellum shining metallic green; upper pleura brown, lower pleura yellow; seta over fore coxa pale.

Coxae and fore and middle legs mostly yellow; hind femur and tibia darker yellowish; hind tarsus brownish; 5th segments of tarsi I and II brown. Setae of posterior surface of femur I all nearly as long as width of femur, especially distal posteroventrals; femur II with ca. 8 rather distinct, erect anteroventrals; femur III narrow, becoming broadest in distal  $1/4$ , with many rather long, erect setae along both anterodorsal and anteroventral surfaces.

Tibia I with scarcely distinct posteroventral near base; tibia II with large anterodorsal and small posteroventral near  $1/5$ , 1 or 2 apicals; tibia III with series of ca. 10 rather distinct posterodorsals, 4 apicals. Hind basitarsus with small ventral at  $1/2$ ; relative lengths of tarsal segments from base as



tarsus I, 23-14-9-7-5; tarsus II, 26-14-10-6-5; tarsus III, 15-20-13-9-5.

Wing narrowly oval with oblong base, broadest near basal  $1/3$ ; clear, veins yellowish brown. Veins 2 and especially 3 curving backward at tips, vein 3 straight at tip and parallel with tip of vein 4, ending before wing apex and nearer vein 4 than vein 2; vein 4 ending behind wing apex. Crossvein slightly shorter than last of vein 5. Calypter and setae black; halter pale.

Abdomen dark shining brown, rather pale areas on sides of tergites 2-4; tergum 6 bare, sternites bearing long pale setae. Hypopygium with rather weak setae posteriorly; lamellae brown with long brown marginal setae.

**FEMALE.**—Face as wide as antennal segment 1, grayish pollinose. Mesoscutum often more bluish than in male. Femora without prominent rows of setae, a few anteroventrals distally on femur III; femur III narrow but widest near middle; tibia II with anterodorsals at  $1/3$  and  $2/3$ , small postero-dorsal at  $1/4$ , ventrals at  $2/5$  and  $3/4$ , 4 apicals; tibia III with 4 or 5 posterodorsals, 4 apicals. Wing oval with anal angle less prominent. Abdomen with spots on sides of terga 2 and 3 distinctly yellow, sternites mostly pale.

**COLLECTION DATA.**—Dominica: 1 ♀ Deux Branches, Pagua River 2 Feb, 1 ♂ South Chiltern Estate 8 Feb, 1 ♀ North Deux Dleau River 14 Feb, 2 ♂ La Ronde River 15 Feb, 1 ♂ Forest Reserve 29 Feb, 6 ♀ Dleau Morne Laurent 1 Mar, 2 ♂ Springfield Estate 9 Mar 1964 H. Robinson; 2 ♂ and 1 pair in copulation 15 Mar 1964 H. Robinson, 1 ♂ and 1 ♀ 6 Mar 1965 W. W. Wirth, 20 ♂ and 10 ♀ 1200' 5-6 Apr 1966 R. J. Gagné, all Trafalgar Falls; 1 ♂ 16 May 1964 D. F. Bray, 1 ♂ 23 Jan, 1 ♂ 25 Jan, 25 ♂ 9 Feb, 40 ♂ and 6 ♀ 9-12 Mar, 4 ♂ and 5 ♀ light trap 13 Mar 1965 all W. W. Wirth, 21 ♂ and 3 ♀ 400' 29 Apr 1966 R. J. Gagné, all Fond Figs River; 1 ♂ Trois Pitons 4 May 1964 O. S. Flint; 1 ♂ Pont Casse 1.7 miles east 10 Mar 1965 W. W. Wirth; 1 ♂ Pont Casse 2 miles NW 4 May 1965 D. R. Davis; 2 ♀ Pont Casse 2 miles east 10 Apr, 1 ♂ Pont Casse 0.5 mile east 11 Apr, 4 ♂ and 4 ♀ Newfoundland, 1000', on road to Rosalie 13 Apr, 4 ♂ and 1 ♀ trail, 1 mile north junc. rds. to Rosalie and Castle Bruce, 1300' 23 Apr, 2 ♂ 24 Apr, 1 ♂ 3 May 1966 Clarke Hall, all R. J. Gagné; 1 ♂ La Plaine 29 Oct 1966 A. B. Gurney.

**REMARKS.**—The species is known from St. Vin-

cent, Grenada, and Dominica. Specimens often are taken from foliage or moist rocks. Dr. Wirth noted members of the species hovering in large numbers in the manner of many Empididae.

## Subfamily PLAGIONEURINAE

### Genus *Plagioneurus* Loew

Large with mostly black setae and mostly metallic green body. Face broad, bulging in middle with vertical median furrow, transverse suture indistinct, face slightly broader in female; front square. Palpus broad, black with numerous black setae; proboscis black, pseudotracheae geminately sclerotized. Antennal segment 1 pointed on inside corner, bare above; segment 2 overlapping base of segment 3 above, with a ring of setae which are longer above and below; segment 3 ovate, sharply pointed, arista dorsal. Vertex not excavated; hind surface of head flat; lower postocular setae multiseriate.

Thorax with mesoscutum evenly convex; no acrostichals; 6 pairs of large dorsocentrals, 5th pair set out of line; scutellum with 2 large bristles; propisternum with clumps of pale hair above and below. All coxae with pale hairs and black bristles. Middle and hind femora with preapicals.

Wing broad at base, narrowed distally to narrowly rounded tip. Veins 2 and 3 close to anterior margin and curving gradually backward, ending distinctly before wing apex, vein 2 ending nearly twice as far from wing apex as vein 3; vein 4 widely diverging, not bending at crossvein, bending forward in middle of last part, ending before wing apex and near tip of vein 3; crossvein very oblique, nearly parallel to distal part of vein 4 and to distal hind margin, slightly shorter than last of vein 5; vein 6 represented by long fold.

Abdomen 1.5 times as long as thorax, slender, laterally compressed. Hypopygium very small, immersed in truncate tip of preabdomen.

**REMARKS.**—The genus and subfamily are monospecific, consisting of the following widely distributed, single species.

### *Plagioneurus univittatus* Loew

FIGURES 189, 190

*Plagioneurus univittatus*, Loew, 1857:43.

**MALE.**—Length 6.0 mm; wing 5.3 mm by 1.9 mm. Face silvery pollinose with metallic green ground color scarcely evident; front shining metallic blue, about as wide as face. Antenna black; segment 3 with sides rather concave with sharp edges, arista from near base of dorsal edge. Lower postocular setae white.

Thorax shining metallic green, with slight grayish pollen, middorsum with longitudinal reddish streak that extends over scutellum; pleura with thicker grayish pollen.

Legs with coxae and most of femora metallic green; fore and middle knees yellow; legs black from middle of tibia I, from basal 1/4 of tibia II, and from base of tibia III. Fore coxa with black bristles along distal margin and series of 3 across upper surface; middle and hind coxae with a large external black bristle; middle coxa with many black setae near tip, hind coxa with smaller black setae outside near tip and behind. Femur I with 1 or 2 stout black anterodorsals near tip, ca. 12 long, mostly black posterodorsals along whole length, posterior surface with numerous long pale hairs, 7 long black anteroventrals along distal 1/2, 7 long pale posteroventrals along basal 1/2; femur II with 2 stout black anterior preapicals near 2/3 and 4/5, series of long black setae anteroventrally and posteriorly in distal 1/2, long, mostly pale ventrals along basal 1/2; femur III with 2 dorsals, 2 anterodorsals, 1 anteroventral, and 2 posteroventrals near tip, all black, 1 long black ventral near base, numerous other, mostly shorter, ventrals along basal 1/2. Tibia I with long dorsals at 1/4, 2/5, and 3/4, long posteroventrals at 1/3 and 3/4, 3 short apicals; tibia II with large anterodorsals at 1/6 and 2/5, a smaller one at 2/3, posterodorsals at 1/4 and 3/5, large ventrals at 1/4 and 2/3, 4 or 5 large apicals; tibia III with 5 large anterodorsals, 3 large and many variously smaller posterodorsals, 16 or 17 smaller bristles along posterior surface, various short ventrals. All tarsi with small spicules and short apicals ventrally; 5th segment of tarsus I with small ventral spur near base; tarsus III with long curved black setae above on segment 4 and tip of segment 3; relative lengths of tarsal segments from base as tarsus I, 37–18–11–8–8; tarsus II, 64–24–19–13–8; tarsus III, 28–36–22–14–10.

Wing (Figure 189) clear to slightly brownish, veins brown. Calypter and setae white; halter yellow.

Abdomen partly metallic green with black color on bases of tergites becoming progressively wider, tergites 3–5 blackish except hind margins, tergite 6 all blackish; sides partly whitish pollinose; long, black marginal setae on tergites 1 and 3–6, those of tergite 1 very spreading; sternites with long pale setae; tergite 6 (Figure 190) with a series of 4 stout setae at lower posterior corner, 3 very stout, short setae in tight group on lower hind margin. Hypopygium whitish pollinose with numerous white setae.

**FEMALE.**—Face slightly wider; antennal segment 3 shorter-pointed, only slightly longer than wide. Femur II with anteroventrals less distinct; segment 5 of fore tarsus without spur; hind tarsus without long dorsal setae.

**COLLECTION DATA.**—Dominica: 1 ♂ Clarke Hall, malaise trap 11–20 Jan, 2 ♀ Cabrit Swamp 22–25 Mar 1965 W. W. Wirth.

**REMARKS.**—This large and distinctive species is known from South Dakota and Massachusetts in North America south to Uruguay and Bolivia in South America.

## Subfamily STOLIDOSOMATINAE

### Genus *Pseudosympycnus* Robinson

Rather small to medium sized, light to very dark metallic green, setae mostly black. Face of male very narrow near middle, wider above and below; palpus enlarged, round; face and palpi together very prominently covered with silvery white pollen; face of female with sides nearly parallel, upper part and clypeus slightly wider, palpi small; front small, less than 1/2 as high as face, about as broad as high, ocellar region without prominent tubercle. Antenna black; segment 1 bare above; segment 2 truncate apically, arista dorsal. Lower postocular setae uniseriate.

Thorax with mesoscutum rather evenly rounded, covered anteriorly with numerous distinct small setae; acrostichals biseriate; 5 pairs of large dorso-centrals, a 6th anterior pair greatly reduced; scutellum with 2 bristles, without hairs; proepisternum with only a few pale setae above. Fore and middle coxae with numerous setae on anterior surface; middle and hind coxae with an external bristle. Femur II with anterior and posterior preapical; femur III with anterior preapical. Tibia III of male

with small notch at tip. Male fore tarsus and distal segments of hind tarsus modified.

Wing narrowly oval, anal margin of male only slightly rounded, more prominent in female; veins 3 and 4 gradually curved, usually slightly closer at tip than opposite crossvein; crossvein as long as or longer than last of vein 5; vein 6 represented by slight fold.

Abdomen long and slender, cylindrical, with 6 visible tergites in male. Hypopygium small, enclosed in tip of preabdomen; appendages short.

REMARKS.—The genus is known to have five species and ranges from Mexico south to Brazil (Robinson, 1967c). The single following species is known from Dominica.

***Pseudosympycnus perornatus* Robinson**

FIGURE 191

*Pseudosympycnus perornatus* Robinson, 1967c:902.

MALE.—Length 3.3 mm; wing 2.9 mm by 0.9 mm. Face and palpus prominently silvery pollinose, typical of genus; front small, dark metallic bluish dulled with whitish pollen. Proboscis dark. Antenna high on head, all segments short; segment 3 triangular, rather pointed, about as long as high. Lower postocular setae brownish with some pale reflections.

Thorax dark metallic green, with slight whitish pollen above; pleura with thicker gray pollen.

Legs mostly pale; outer surface of middle coxa, hind tibia, distal segments of fore tarsus, middle tarsus from tip of basitarsus, and all hind tarsus brownish. Setae dark including those of fore coxa. Femur I with rather long hair on posterior surface; femur II with dense short pubescence ventrally; femur III with anteroventral rows of setae prominent. Tibia I rather stout with slight constriction near tip, without distinctive setae; tibia III with 3 anterodorsals and 2 posterodorsals, 2 apicals, a series of close-set, short, erect setae along whole anteroventral surface and continued along basitarsus; tibia III with 8 or more small posterodorsals, with numerous crowded short erect setae posteriorly and ventrally which are especially fine and crowded ventrally near middle, 1 small apical dorsally. Tarsus I (Figure 191) with segment 1 compressed and trapezoidal, with dorsal crest bearing dense fringe of setae; segment 2 bearing 2 short blunt spurs,

basal spur anterodorsal bearing a few short, slightly curved setae and 1 stouter short hooked seta, distal posterodorsal spur bearing dense tuft of longer setae; segment 3 with longer hairs on anterior surface, segments 3–5 otherwise essentially plain; tarsus II plain except erect seta on basitarsus; tarsus III segment 3 with long flexuous setae posteriorly and slender apicals dorsally, segment 4 with slender apicals dorsally and a series of slender erect setae below; relative lengths of tarsal segments from base as tarsus I, 6–1–3–4–2; tarsus II, 14–4–4–3–2; tarsus III, 3–6–3–4–3.

Wing rather brownish. Veins 2, 3, and last part of 4 curving gradually backward toward tip; vein 4 curved less and closer to vein 3 at tip. Crossvein about as long as last of vein 5. Calypter and setae black; halter yellow.

Abdomen longer than thorax, slender, curving downward, brown with a large lateral yellow spot on tergite 2. Hypopygium small, brown; lamellae short, triangular, brown.

FEMALE.—Face plain, palpus small and yellow with black setae. Fore tibia with 1 small anterodorsal; tibia II with 2 or 3 small ventrals; tibia III with 3 or 4 anterodorsals, ventrals lacking or only 1 ventral, 4 apicals; tarsi plain, relative lengths of segments as tarsus I, 8–4–3–2–2; tarsus II, 15–5–3–2–2; tarsus III, 4–8–4–2–2. Abdominal segment 3 slightly yellowish on side.

COLLECTION DATA.—Dominica: 2 ♂ and 2 ♀ 28 Jan, holotype ♂, 5 ♂ and 2 ♀ wet rocks in deeply shaded ravine 14 Feb 1964 H. Robinson, all North Deux Dleau River; 3 ♀ on rocks in stream near Sylvania 9 Feb, 1 ♂ and 4 ♀ along trail from Freshwater Lake to Boeri Lake 22 Feb, allotype ♀, 1 ♂ and 4 ♀ on surface of dam, Freshwater Lake 23 Feb, 1 ♂ Trafalgar Falls 15 Mar 1964 H. Robinson; 3 ♂ 16–17 Mar 1964 H. Robinson, 5 ♂ and 6 ♀ light trap 13 Mar 1965 W. W. Wirth, all Fond Figue River; 1 ♀ Newfoundland, 1000', on road to Rosalie 13 Apr 1966 R. J. Gagné.

REMARKS.—The present species is most easily distinguished by the much enlarged and ornate first segment of the male fore tarsus.

**Genus *Stolidosoma* Becker**

Medium size to large, partly yellow, sometimes rather bluish or black, with setae mostly dark. Face narrow and sometimes obliterated in middle, wider

above and below, in male sometimes projecting well below lower margin of eyes; front broad, broader above, usually blue or violet, ocellar bristles usually mounted on pair of prominent tubercles behind anterior ocellus. Antennal segment 1 with or without setae above; segment 2 truncate apically; arista dorsal near base of segment 3. Hind surface of head rather flat in male, lower postocular setae pale.

Thorax with mesoscutum rather evenly rounded, usually shining bluish along middle of dorsum; acrostichals weak, biseriate, uniseriate or lacking; 5 or 6 pairs of dorsocentrals, 6th anterior pair usually very small; scutellum with 2 large bristles, otherwise bare; proepisternum with clustered pale hairs, sometimes nearly bare above. Legs long and slender. Fore and middle coxae usually with numerous small hairs anteriorly; middle and hind coxae with a strong bristle toward outer side. Femora with small or indistinct preapical bristles; male hind tibia slightly notched at tip. Segment 2 of male fore tarsus with short hooked hairs covering anteroventral surface or otherwise modified; segment 1 of hind tarsus very short, distal segments of hind tarsus with distinctive setae or a small spur.

Wing rather elongate-oval, anal lobe not prominent; veins brown. Veins 2 and 3 diverging; vein 3 rather straight beyond crossvein; vein 4 usually bent near middle of last part, becoming convergent with vein 3; vein 6 represented by slight fold. Calypter pale with a black border and a crest of black setae; halter with a cluster of setae above and below at base of knob.

Abdomen long and cylindrical. Hypopygium small, capping tip of preabdomen.

REMARKS.—The genus is distributed in the Neotropical region from Mexico south to Bolivia. The recent revision (Robinson, 1967c) recognized 17 species in 3 rather distinctive subgroups. The single following Dominican species is the only known member of the third subgroup having 6 pairs of large dorsocentrals.

***Stolidosoma hexachaeta* Robinson**

*Stolidosoma hexachaeta* Robinson 1967c:898.

MALE.—Length 3.5 mm; wing 2.0 mm by 1.0 mm. Face very narrow with eyes nearly contiguous near

middle, lower edge somewhat rounded, lower 1/2 covered with silvery white pollen. Front small, slightly wider above, evenly convex, shining metallic bluish green without noticeable pollen; ocellar bristles not raised on prominent tubercle. Palpus and proboscis brownish with brownish setae. Antenna pale brownish, all segments short; segment 1 bare above; segment 3 about as long as high, triangular, acute.

Thorax with most of mesoscutum and with scutellum metallic bluish or violet, humeral area yellowish; pleura dark brownish with sutures and metepimeron yellow; acrostichal setae and pre-sutural bristle absent; 6 pairs of large dorsocentrals, anterior pair only slightly smaller; proepisternum with 1 or 2 small pale setae above, a few larger hairs below.

Legs including coxae mostly yellow; middle tibia whitish; middle and hind tarsi brownish from tips of basitarsi. Anterior surface of fore and middle coxae with dark hairs; middle and hind coxae with posterior surface bare. Anterior and posterior preapicals of femur II small; femur III with slightly larger anterior preapical. Tibia I without bristles; tibia II with large anterodorsal and posterodorsal paired near base, 1 anterodorsal near distal 1/3, 4 or 5 small indistinct ventrals, 5 apicals; tibia III with 1 strong anterodorsal, usually 3 or more variously sized posterodorsals, 2 very slender ventrals with the more distal one being very small, 2 distinct apicals posteriorly. Tarsus I segment 2 with a few hooked pale setae ventrally on only distal 1/2; tarsus III segments 2-4 combined so as to resemble 1 segment, segment 4 with a few long slender curved setae at tip dorsally, segment 5 with series of progressively somewhat shorter curved setae along dorsal surface; relative lengths of tarsal segments from base as tarsus I, 60-25-25-15-15; tarsus II, 90-33-27-18-15; tarsus III, 21-24-12-10-95.

Wing elongate-elliptical, slightly brownish. Vein 2 nearly straight; veins 3 and 4 curving very slightly backward, subparallel. Crossvein almost as long as last of vein 5. Knob of halter yellow to pale brownish.

Abdomen curving distinctly downward posteriorly, with tergites rounded, not flattened dorsally, sides and venter of segments 2 and 3 pale to translucent. Hypopygium small, brown, with rather pale lamellae.

**FEMALE.**—Face  $1/4$  as wide as high, produced below but not reaching level of lower eye margin, dark, nearly covered with whitish pollen. Hind tibia without slender ventrals; tarsi plain, relative lengths of segments as tarsus I, 45–21–15–10–10; tarsus II, 65–27–21–15–12; tarsus III, 21–45–27–18–15.

**COLLECTION DATA.**—Dominica: 7 ♂ and 14 ♀ South Chiltern Estate, near spring and waterfall 7–8 Feb, 1 ♀ near Sylvania 10 Feb 1964 H. Robinson; holotype ♂, allotype ♀, 3 ♂ and 1 ♀ 13 Feb–7 Mar 1964 H. Robinson, 2 ♂ and 1 ♀ 1–7 Mar 1965 W. W. Wirth, Clarke Hall, Manets Gutter; 2 ♀ Dleau Morne Laurent 1 Mar 1964 H. Robinson; 1 ♀ trail, 1 mile north junc. rds. to Rosalie and Castle Bruce, 1300' 23 Apr 1966 R. J. Gagné.

**REMARKS.**—This species is very distinct in the six pairs of large dorsocentral bristles, the lack of an ocellar tubercle in the male, and in the unique configuration of the male hind tarsus.

### Subfamily SYMPYCNINAE

#### Genus *Sympycnus* Loew

Small to medium size, brownish or yellowish, sometimes metallic greenish, setae black. Face narrowed in male, eyes sometimes contiguous in middle of face; face wider in female, without setae; front broad, somewhat broader above. Palpus

usually small and oval with small hairs, very small in male. Pseudotracheae 6, geminately sclerotized. Antennal segment 1 bare above; segment 2 truncate apically; segment 3 unusually small, arista dorsal. Head not strongly excavated behind; postoculars uniseriate.

Thorax with mesoscutum rather evenly rounded; acrostichals small, uniseriate or lacking, rarely biseriate; 5 or 6 pairs of dorsocentrals, 5th pair out of line and often reduced or rarely lacking; scutellum with 2 bristles, hair on lateral margin sometimes minute, often with additional hairs; 2 or 3 small setae above fore coxa. Fore and middle coxae short with numerous hairs anteriorly and bristles distally; hind coxa with 1 large external bristle. Femora slender; femur II with preapical anteriorly and posteriorly; femur III with anterior preapical; tibia III often rather enlarged toward apex, without apical notch; male tarsi sometimes ornate.

Wing oval to narrowly oblong. Veins 2 and 3 diverging distally; last of vein 4 usually parallel with vein 3; crossvein usually perpendicular to part of vein 4, shorter or rarely longer than last of vein 5; vein 6 represented by slight fold.

Abdomen elongate, cylindrical, often curving downward. Hypopygium small, capping tip of preabdomen; cerci usually narrow and elongate; armatures and inner appendages short. Female genitalia with crest of dornen above.

**REMARKS.**—The genus is widely distributed in

### Key to the Species of *Sympycnus* in Dominica

1. Length ca. 1.5 mm; thorax with 5 pairs of dorsocentrals ..... *S. pentachaetus*  
Length more than 2.0 mm; thorax with 6 pairs of dorsocentrals, the 5th pair smaller and out of line ..... 2
2. Crossvein more than twice as long as last of vein 5; male face very broad in upper  $1/2$ , twice as broad above in female; male fore tarsus with greatly expanded dorsal lobe on segment 4 ..... *S. latifacies*  
Crossvein only as long as or slightly longer than last part of vein 5; male face nearly obliterated by contiguous eyes, sides of female face parallel; male fore tarsus with segments 4 and 5 unexpanded or equally expanded dorsally ..... 3
3. Wings tinged with brown; hind basitarsus shorter than segment 2; male abdominal tergites wholly brown or violet ..... *S. dominicensis*  
Wings clear; hind basitarsus longer than segment 2; male abdomen with large yellow spots on sides of tergites 2–4 ..... 4
4. Yellow spots of abdomen meeting dorsally on at least tergite 2, especially in female; segment 3 of male antenna distinctly pointed; segments 4 and 5 of male fore tarsus with small but distinct dorsal wing ..... *S. bredini*  
Yellow spots of abdomen not meeting dorsally, brown of dorsum continuous; segment 3 of male antenna rather blunt or truncate; segments 4 and 5 of male fore tarsus cylindrical or flattened ..... *S. nephophilus*



the world and is reported throughout the Western Hemisphere where it is more common to the south. Species are common on foliage and moist rocks in shaded areas. The concept of the genus has been somewhat improved by the removal of various species of *Stolidosoma*, *Pseudosympycnus*, and *Symbolia* (Robinson, 1966, 1967c). The following five species are known from Dominica.

***Sympycnus pentachaetus*, new species**

**MALE.**—Length 1.4 mm; wing 1.8 mm by 0.6 mm. Eyes contiguous in middle without evident facial remnant below, narrow upper facial wedge brown as preserved but probably originally whitish pollinose; front small, brown. Proboscis brown. Antennal segments 1 and 2 dark yellow; segment 3 brown, short-pointed, as long as high, arista from middle of dorsal edge. Lower postocular setae pale brownish.

Mesoscutum and scutellum brown; pleura pale; no acrostichals; 5 pairs of dorsocentrals.

Legs pale yellow; hind femur, tibia, and tarsus darker yellow. Fore coxa plain. Femora and fore tibia without distinctive bristles. Tibia II with large anterodorsals at 1/4 and 1/2, small posterodorsal at 1/5, 3 apicals; tibia III without distinct dorsals or ventrals. Tarsi plain, relative lengths of segments from base as tarsus I, 12–7–5–5–5; tarsus II, 14–8–6–5–5; tarsus III, 8–10–8–7–5.

Wing narrowly elliptical with anal lobe partially reduced, anal margin only slightly curved; surface slightly brownish tinged, veins brown. Veins 2 and 3 and last of vein 4 curving very slightly backward; vein 3 and last of vein 4 parallel, 4 ending in or just behind wing apex. Crossvein perpendicular to base of vein 4, 2/3 as long as last of vein 5. Calypter margin, setae, and knob of halter brown.

Abdomen usually curving slightly downward, brown. Hypopygium brown; cerci narrowly triangular, slightly attenuate, rather pale with pale setae; armatures short and rather broad.

**FEMALE.**—Face with straight sides, as wide as antennal segment 3, whitish pollinose; antennal segment 3 a little shorter than wide; palpus larger, brownish. Tibia II with ventral at 2/3 rather distinct. Anal margin of wing slightly more rounded.

**TYPE DATA.**—Holotype ♂, 8 ♂ and 10 ♀ para-

types from Dominica: Boeri Lake trail 22 Feb 1964 H. Robinson (USNM 72916). Allotype ♀ from Dominica: Fond Figs River 17 Mar 1964 H. Robinson. Additional paratypes from Dominica: 2 ♀ South Chiltern Estate 6 Feb, 6 ♂ and 26 ♀ near Sylvania 9–10 Feb, 1 ♂ Freshwater Lake 21 Feb, 1 ♀ Forest Reserve 29 Feb 1964 H. Robinson; 1 ♂ Pont Casse 1.5 miles north 12 Feb, 1 ♂ 15 Feb, 1 ♂ 16 Mar Dleau Gommier, 1 ♂ Fond Figs River, light trap 13 Mar 1965 all W. W. Wirth; 1 ♀ Pont Casse 0.5 mile east 11 Apr, 1 ♂ trail, 1 mile north junc. rds. to Rosalie and Castle Bruce, 1300' 23 Apr, 1 ♂ Dleau Gommier, 1700' Central Forest Res. 26 May 1966 all R. J. Gagné.

**REMARKS.**—The new species is most distinct in the reduced number of dorsocentral bristles. There is no trace of the somewhat reduced and displaced fifth pair of dorsocentrals found in other species of *Sympycnus*.

***Sympycnus latifacies*, new species**

FIGURES 192, 193

**MALE.**—Length 2.3 mm; wing 2.4 mm by 0.7 mm. Eyes nearly contiguous near mouth, face wide in middle and above, silvery pollinose; front small, brownish with thin pollen. Palpi very small, yellow with a few small setae; proboscis brownish. Antennal segments 1 and 2 dark yellow; segment 3 brown, pointed, 1.5 times longer than high, arista from middle of upper edge. Lower postocular setae pale.

Mesoscutum pale brownish with faint brown lines along middle and along rows of dorsocentrals; scutellum dark brown; pleura yellow, glaucous; no acrostichals; 6 pairs of dorsocentrals, 5th pair smaller and set out of line.

Legs mostly yellow; coxae glaucous; tips of tarsal segments brownish; last 2 segments of fore tarsus brown. Fore coxa with only minute pale hairs anteriorly, a small comb of anteriorly directed, pale setae on outer edge near tip adjacent to the black apical setae. Femora plain with rather small preapicals. Fore tibia plain; tibia II with very small anterodorsals at 1/5 and 3/5, 2 or 3 smaller indistinct posterodorsals, 1 ventral near 2/3, 3 apicals; tibia III with 1 or 2 small dorsals near 3/4, series of ca. 8 ventrals along distal 2/3, 3 short apicals. Tarsus I (Figure 193) with segment 4 compressed and bearing broad blunt dorsal lobe as long as

segment, segment 5 small and compressed,  $3/4$  as wide as long; tarsus III basitarsus with 2 rows of very slender setae ventrally with longest setae basal, segment 5 slightly enlarged; relative lengths of tarsal segments from base as tarsus I, 26-17-11-9-5; tarsus II, 36-16-12-6-5; tarsus III, 21-19-13-8-6.

Wing (Figure 192) narrowly elliptical with anal lobe reduced, anal margin straight; surface slightly yellowish tinged, veins brown. Juncture of costa and vein 1 with slight but distinct enlargement; vein 2 curving backward near tip; vein 3 more gradually curved, ending slightly nearer vein 4 than vein 2; last of vein 4 straight, ending distinctly behind wing apex. Crossvein distinctly curved, over twice as long as last of vein 5. Calypter margin brown, setae pale brownish; knob of halter brown.

Abdomen curved downward, brown with tergite 1 yellow and glaucous, base of venter pale, slight gray pollen on tergite 6. Hypopygium brown; cerci brown with pale setae; armature narrow, blackish.

**FEMALE.**—Face as broad below as antennal segment 3, becoming gradually broader above, twice as broad at antennae, whitish pollinose; palpus larger. Antennal segment 3 very short-tipped to truncate, about as long as high, arista at upper corner. Fore coxa as in male; preapicals of femora slightly larger; tibia II with anterodorsals larger, rather large posterodorsal near  $2/5$ , ventral small; tibia III with large anterodorsal at  $3/5$ , 3 or 4 small indistinct posterodorsals, 6 or 7 very small, indistinct ventrals; fore tarsus plain except segment 5 slightly broadened; hind tarsus plain. Wing elliptical with broadly rounded anal lobe. Abdomen brown with tergite 1 yellow and glaucous as in male.

**TYPE DATA.**—Holotype ♂, allotype ♀, and 1 ♂ paratype from Dominica: Deux Branches, Pagua River 3 Feb 1964 H. Robinson (USNM 72917). Additional paratypes from Dominica: 3 ♂ 28 Jan, 1 ♂ 14 Feb North Deux Dleau River, 4 ♂ and 15 ♀ South Chiltern Estate 6-7 Feb, 1 ♂ and 3 ♀ near Sylvania 9 Feb, 1 ♀ Freshwater Lake 21 Feb, 1 ♂ Forest Reserve 29 Feb, 1 ♂ Dleau Morne Laurent 1 Mar, 1 ♂ Clarke Hall 2 Mar, 2 ♀ Syndicate Estate 6 Mar 1964 all H. Robinson; 1 ♀ Boeri Lake 22 Feb 1964 D. F. Bray.

**REMARKS.**—The new species has many features—including the general structure of the fore and hind tarsi—similar to *Sympycnus patellatus* Parent of Mexico, Costa Rica, and Panama. The new

species is distinct in the broadened upper half of the male face.

### *Sympycnus dominicensis*, new species

FIGURE 194

**MALE.**—Length 2.7 mm; wing 2.3 mm by 0.65 mm. Eyes contiguous, minute facial area below and narrow wedge above both grayish brown pollinose; front small, brown with thin pollen. Palpi small, pale pollinose; proboscis brown. Antenna brown, basal segment somewhat yellowish; segment 3 triangular, as long as high, short-pointed, arista from middle of dorsal edge. Lower postocular setae pale brownish.

Thorax brown, darker above, lower metepisternum pale; no acrostichals; 6 dorsocentrals in each row, 5th smaller and out of line.

Fore and middle legs including coxae, ventral margin of hind femur, and anteroventral streak on hind tibia whitish to pale yellow; coxa, femur, and tibia of hind leg dark yellow; segment 5 of fore tarsus and hind tarsus from middle of basitarsus brownish. Fore coxa rather long with fine, white hairs anteriorly, 1 or 2 black setae at tip. Femora and fore tibia without special setae; tibia II with anterodorsals at  $1/3$  and  $2/3$ , small posterodorsal near  $1/4$ , small posteroventral near  $2/3$ , 3 apicals; tibia III with small anterodorsal at  $1/4$ , smaller posterodorsal at  $3/4$  and a very small one at  $1/2$ , only very small indistinct ventrals, 3 apicals. Tarsus I (Figure 194) with segments 1 and 2 very slender, segment 1 with series of 5 or 6 slender curved setae ventrally with last 2 of series very long and with last one at apex; relative lengths of tarsal segments from base as tarsus I, 22-18-8-2-2; tarsus II, 24-12-10-6-3; tarsus III, 14-16-10-8-5.

Wing narrowly elliptical, anal margin straight to slightly concave along basal  $1/4$ ; surface infused with brown anteriorly, veins brown. Vein 2 and last of vein 4 curving very slightly backward; vein 3 curving distinctly backward in distal part, ending nearer tip of vein 4 than vein 2; vein 4 ending in wing apex. Crossvein about as long as last of vein 5. Calypter and setae black; knob of halter brown.

Abdomen nearly twice as long as thorax, rather straight, slender, broader toward tip, rather truncate; dorsum dark brown, tergites 2-6 darker with

violet reflections, sternites brown. Hypopygium very small, mostly immersed in tip of preabdomen, brown; armature narrow, black toward tip; appendage slender, brown with pale short hairs and 1 short black apical seta.

**FEMALE.**—Face with straight sides, as wide as antennal segment 3, grayish pollinose; palpus larger, brown. Lower pleura more yellow. Legs all yellow; tarsi plain, relative lengths of segments as tarsus I, 17–10–5–3–3; tarsus III, 13–17–10–7–6. Wing elliptical, tinged throughout with brown, anal margin slightly and evenly curved. Abdomen curved downward when dry; dark brown above with yellowish areas along sides of tergites 2–4, venter pale.

**TYPE DATA.**—Holotype ♂ and 1 ♂ paratype from Dominica: Clarke Hall, cocoa trail 16 Feb 1965 W. W. Wirth (USNM 72918). Allotype ♀ from Dominica: Boeri Lake 22 Feb 1964 D. F. Bray. Additional paratypes from Dominica: 1 ♂ Clarke Hall, Manets Gutter 7 Mar 1965 W. W. Wirth; 1 ♂ Clarke Hall 8 May 1966 R. J. Gagné.

**REMARKS.**—The new species is distinct in the form of the male fore tarsus. The species obviously has a very different ecology from other members of the genus on the island. Both the rarity of collections and the lower elevation seem significant. The female described above was from a higher elevation and agrees in certain technical features, but the specimen may not be conspecific.

### *Sympycnus bredini*, new species

FIGURES 195, 196

**MALE.**—Length 2.5 mm; wing 2.7 mm by 0.9 mm. Eyes contiguous, minute facial area below and narrow wedge above both whitish pollinose; front small, blackish with thin pollen. Proboscis yellow with brownish tips. Antenna (Figure 195) yellow; segment 3 brown except inside at base, pointed, ca. 1.5 times as long as high, arista from middle of dorsal edge. Lower postocular setae pale.

Thorax with scutellum and middle and posterior mesoscutum darkened with metallic bluish reflections, anterior mesoscutum and pleura yellow; no acrostichals; 6 pairs of dorsocentrals, 5th pair very small and set out of line.

Legs mostly yellow; tip of hind femur, sometimes tip of hind tibia, tarsi I and II from tip of basitarsus, and all of tarsus III brown. Fore coxa rather long, setae of coxae I and II mostly pale. Femora and fore tibia plain. Tibia II with large anterodorsals at 1/5 and 3/5, large posterodorsal at 1/3, 3 apicals; tibia III with anterodorsals at 1/4 and 2/3, 5 or 6 indistinct dorsals in distal 2/3, 3 or 4 apicals. Tarsus I (Figure 196) with segment 3 slightly enlarged apically, segments 4 and 5 compressed, as wide at apex as long; tarsus III basitarsus with long slender erect seta posteroventrally at base; relative lengths of tarsal segments from base as tarsus I, 28–16–10–6–5; tarsus II, 44–18–14–6–6; tarsus III, 24–22–15–8–5.

Wing oval, slightly brownish tinged, veins brown. Veins 2 and 3 curved distinctly backward, especially toward tip; vein 3 ending slightly closer to vein 4 than vein 2; last of vein 4 nearly straight, ending in or just behind wing apex. Crossvein perpendicular to base of vein 4, as long as or slightly longer than last of vein 5. Calypter pale with brown border, setae pale brownish; knob of halter infuscated.

Abdomen curved downward; tergites mostly brown above but tergite 1 yellow, large yellow spots filling side of tergites 2–4, spots larger and meeting above on tergite 2; venter yellow. Hypopygium and tergite 6 brown; cerci brownish with tuft of rather dark hairs apically, many pale hairs below.

**FEMALE.**—Face with straight sides, as wide as antennal segment 3, whitish pollinose; palpus larger, yellow. Antennal segment 3 shorter-pointed, only as long as high. Tibia II with a ventral at 2/3 rather distinct; hind femur not brown at tip; tarsi plain and less brown. Abdominal spots larger, meeting dorsally on most segments and leaving the hind margin brown.

**TYPE DATA.**—Holotype ♂, allotype ♀, 3 ♂ and 1 ♀ paratypes from Dominica: Freshwater Lake 23 Feb 1964 H. Robinson (USNM 72919). Additional paratypes from Dominica: 2 ♀ Boeri Lake trail 22 Feb 1964 H. Robinson.

**REMARKS.**—The new species is one of a very closely related pair occurring on the island. Of the two, the present species occurs at the lower elevations, being found at about 2500 to 3000 feet.

*Sympycnus nephophilus*, new species

FIGURES 197, 198

MALE.—Length 2.5 mm; wing 3.0 mm by 1.0 mm. Eyes contiguous, minute facial area below and narrow wedge above both yellowish white pollinose; front small, bluish or brownish with thin pollen. Proboscis yellow with brownish tips. Antenna (Figure 197) yellow; segment 3 mostly brown, short truncate with arista inserted at upper corner. Lower postocular setae pale.

Thorax with mesoscutum dull brownish, centrally with some metallic bluish reflections; pleura yellow; acrostichals absent; 6 pairs of dorsocentrals, 5th pair smaller.

Legs mostly yellow; tarsi I and II from tip of basitarsus and all of tarsus III brown. Fore coxa rather long with fine, pale setae anteriorly, outer apical setae black. Femora and fore tibia without special setae. Tibia II with large anterodorsals at 1/5 and 3/5, smaller posterodorsals near base and 1/4, no ventrals or only one indistinct ventral; tibia III with large anterodorsals at 1/6 and 1/2, 5 or 6 small rather indistinct posterodorsals, 3 or 4 apicals. Tarsus I (Figure 198) segment 3 with rather long seta posteriorly near apex, segment 5 nearly as broad as long with large claws; tarsus III basitarsus with long slender erect seta posteroventrally at base; relative lengths of tarsal segments from base as tarsus I, 27–13–8–5–5; tarsus II, 43–18–16–8–7; tarsus III, 26–24–15–9–8.

Wing elliptical, slightly brownish tinged, veins brown. Veins 2 and 3 curved distinctly backward, especially toward tip; vein 3 ending slightly closer to vein 4 than vein 2; last of vein 4 more nearly straight, ending in wing apex. Crossvein perpendicular to base of vein 4, about as long as last of vein 5. Calypter pale with brown border, setae pale brownish; knob of halter infuscated.

Abdomen curved downward; tergites brown above, large round yellow spot filling side of each tergite from 1–5, venter yellow. Hypopygium and tergite 6 brown; cerci brown with tuft of rather dark hairs apically, many pale hairs below.

FEMALE.—Face with straight sides, as wide as antennal segment 3, whitish pollinose; palpus larger, yellow. Tibia II with a more distinct ventral at 2/3.

TYPE DATA.—Holotype ♂, 2 ♂ and 11 ♀ paratypes from Dominica: Diablotin, near top 5 Mar

1964 H. Robinson (USNM 72920). Allotype ♀, 4 ♂ and 7 ♀ paratypes from Dominica: Trois Pitons, near top 27 Feb 1964 H. Robinson.

REMARKS.—The new species was the only member of the family found at the higher elevations on the island. The species was found only in the cloud forest near the tops of the two highest mountains on the island.

## Subfamily DOLICHOPODINAE

Genus *Paraclius* Loew

Small to medium sized with mostly metallic green body, setae black. Face narrowed, becoming nearly straight-sided below, pollinose, lower margin straight across, transverse suture not prominent; front broad, broader above. Pseudotracheae 6, geminately sclerotized. Antenna with segment 1 setose above; segment 2 produced on sides and very short below; segment 3 enlarged; arista dorsal, bearing short hairs. Head scarcely excavated behind vertex; postocular setae uniseriate.

Thorax with mesoscutum rather evenly rounded, rows of many small setae near anterior margin; acrostichals small, biseriate; 5 pairs of distinctly enlarged dorsocentrals; scutellum with 2 large bristles, small seta on lateral margin; 1 large seta over fore coxa. Fore and middle coxae with numerous hairs anteriorly, bristles distally; hind coxa with 1 larger and 1 small external bristle. Middle and hind femora with 1 preapical dorsally, hind femur often with preapical anteroventrally; tibia II often with 2 ventrals; no dorsal on hind basitarsus.

Wings oval or elliptical. Veins 2 and 3 diverging distally; vein 4 usually distinctly flexed in last part and convergent with vein 3 distally, sometimes strongly arching forward, ending distinctly before wing apex; crossvein perpendicular to base of vein 4, nearly equal to or longer than last of vein 5; vein 6 represented by fold.

Abdomen about as long as thorax, tapering; tergites with prominent marginal setae. Hypopygium large, reaching forward under preabdomen to near base, fitting in recessed venter at rest; outer lamellae prominent, often appendaged. Female genitalia with crest of dornen above.

REMARKS.—The need to suppress the name *Paraclius* Bigot has been reviewed elsewhere (Robinson, 1964, 1970b).

The following key provides distinctions for the 13 species of *Paraclius* known from the Lesser Antilles. These species include *P. (Gymnopternus) ruficornis* (Aldrich) and *P. (Leptocorypha) pavo* (Aldrich), which were omitted by error from the recent catalogue (Robinson, 1970b), and *P. bellus* Aldrich and *P. (Hercostomus) latipes* (Aldrich), which were erroneously transferred to *Tachytrechus* in the catalogue. *Paraclius bellus* is unusual in the

genus with the series of preapical bristles on the hind femur, and *P. latipes* is very similar to the unusual *P. aberrans* Robinson of Texas and Mexico. Aldrich (1902) noted that *P. arcuatus* is represented in the Lesser Antilles by a light-colored variety. This seems to be the same entity described later as *P. elongatus* Van Duzee.

The seven species of *Paraclius* known from Dominica are treated following the key.

### Key to the Species of *Paraclius* in the Lesser Antilles

1. Wing vein 4 without distinct bend or with bend before middle of last part .....2  
Wing vein 4 with distinct forward bend at or beyond middle of last part .....5
2. Face of male constricted in middle; face of female less than 1/3 as wide as high; hypopygial lamellae divided into 2 lobes, brownish yellow to brown .....3  
Face of male not constricted in middle; face of female about 1/2 as wide as high; hypopygial lamellae oval, pale with brown border .....4
3. Wing vein 4 essentially straight in last part; hypopygial lamellae with lower lobe very short, outer lobe about twice as long with short marginal setae; male femur II without large bristles below, tibia II with 2 small ventrals (St. Vincent, Grenada) .....*P. latipes*  
Wing vein 4 with slight but distinct bend near basal 1/3; hypopygial lamellae with lower lobe very long and slender, outer lobe shorter, margin with many long setae; male femur II with ca. 8 large setae on lower margin, tibia II without ventrals (Dominica) .....*P. sarcionoides*
4. Length ca. 1.6 mm; male basitarsus II plain? (St. Vincent) .....*P. ruficornis*  
Length over 2.0 mm; male basitarsus II with a series of short, erect setae (Dominica) .....*P. dominicensis*
5. Hind femur with series of many long setae along anterodorsal surface ending with preapical bristle (Grenada) .....*P. bellus*  
Hind femur without series of distinct bristles preceding preapical .....6
6. Antenna black (Cuba, Jamaica, St. Vincent, Grenada) .....*P. arcuatus*  
Antenna mostly yellowish .....7
7. Middle coxa wholly yellow; segment 3 of male antenna much enlarged and long-pointed; hypopygial lamellae oval, pale with brown border .....8  
Middle coxa more or less dark on outer surface; segment 3 of male antenna rounded, not prolonged; hypopygial lamellae rather triangular, brown .....9
8. Pleural surface and sides of abdominal tergites yellowish (Dominica) .....*P. megalocerus*  
Pleural surface and sides of abdominal tergites metallic green (St. Vincent) .....*P. pavo*
9. Sides of mesoscutum with prominent black spots at suture and wing base with adjacent spots of white pollen; hypopygial lamella without long basal tail (United States, West Indies) .....*P. quadrinotatus*  
Mesoscutum mostly metallic green or reddish; hypopygial lamellae with or without long basal tail .....10
10. Scutellum usually reddish; arista of male without apical lamella .....11  
Scutellum not reddish; arista of male with small apical lamella .....12
11. Tibia I with a median dorsal and a posterodorsal near middle; basitarsus of male fore tarsus longer, tarsal segments as 12-5-4-2.5-2.5; hypopygial lamellae without basal tail, inner appendages rodlike (Dominica) .....*P. affinis*  
Tibia I with only 1 seta near middle being toward posterior side; male fore tarsus with segments from base as 9-4-3-2-4; hypopygial lamellae with basal tail, inner appendage broad and bilobed (United States, Mexico, West Indies) .....*P. filifer*
12. Arista very narrow in the 1/3 of its length before apical lamella; tibia II with 2 ventral setae (Central America, West Indies) .....*P. discifer*  
Arista not narrower in 1/3 before apical lamella; tibia II with 1 ventral seta (eastern North America, Central America, West Indies) .....*P. claviculatus*



*Paraclius sarcionoides*, new species

FIGURES 207-209

MALE.—Length 2.8 mm; wing 2.9 mm by 1.0 mm. Face silvery pollinose, narrow, 1/2 as wide at mouth as at antennae, narrowest at middle; front shining metallic green, scarcely yellowish pollinose. Palpus and proboscis brownish yellow. Antenna (Figure 208) mostly reddish yellow, more brownish beyond arista; segment 1 with 2 points inside and below; segment 3 blunt, broadly oval, scarcely longer than wide; arista from middle of dorsal edge, short-haired. Lower postocular setae pale.

Thorax with mesoscutum and scutellum bright metallic green, blackish laterally from suture to above wing; pleura mostly metallic green obscured by grayish pollen, posterior margin and adjacent pleura more brownish.

Legs including coxae mostly yellow; outer surface of middle coxa dark. Outer surface of middle coxa with ca. 5 short but distinct setae in basal series. Femur II with ca. 13 erect setae ventrally 1/2 as long as width of femur, longest ones in middle; femur III with ventral setae in basal 1/2 slightly erect, a small anteroventral preapical. Tibia I with very small anterodorsal near 1/3, large posterodorsal near 3/5, apicals posterodorsally and posteriorly; tibia II with 4 anterodorsals and 3 posterodorsals including 2 pairs in basal 1/4, 1st pair small, no ventrals, 5 apicals; tibia III with 4 anterodorsals and 5 posterodorsals, basal pair and last posterodorsal small, 1 small anterodorsal near 2/3, 3 apicals with 1 ventrally. Tarsi plain; relative lengths of segments from base as tarsus I, 11-5-4-3-3; tarsus II, 15-9-7-5-3; tarsus III, 10-15-11-7-4.

Wing (Figure 209) narrowly elliptical, anal margin only slightly rounded; veins brown. Vein 2 straight; vein 3 curved slightly backward toward tip; vein 4 bent slightly forward near basal 1/3 of last part, scarcely arched and ending near tip of vein 3. Crossvein straight, as long as last of vein 5. Calypter and halter yellow, former with black setae.

Abdomen with tergites dark metallic green, mostly with reddish yellow reflections, blackish along sutures; tergites 1-4 with much shorter marginal setae than tergite 5; sternites blackish, sternite 4 a thickened plate, others less distinct. Hypopygium

(Figure 207) blackish brown; lamellae brown, in form of 2 long narrow prolongations at right angles to each other, with fine, pale marginal setae, apical prong twice as long as upper prong and usually curved upward; inner appendages short, dark yellowish.

FEMALE.—Face not narrower below, scarcely constricted in middle, white pollinose, lower 1/2 below suture rather prominent. Femur III without distinct ventrals; tibia I with anterodorsal larger and paired with small posterodorsal; tibia II with anteroventral near 1/2, posteroventral near 2/3. Wing with anal lobe distinctly rounded.

TYPE DATA.—Holotype ♂, 6 ♂ and 6 ♀ paratypes from Dominica: South Chiltern Estate 7 Feb 1964 H. Robinson (USNM 72921). Allotype ♀ and 4 ♂ paratypes from Dominica: Forest Reserve 29 Feb 1964 H. Robinson. Additional paratype from Dominica: 1 ♂ South Chiltern Estate 8 Feb 1964 H. Robinson.

REMARKS.—The new species is the only local representative of the group having deeply bilobed hypopygial lamellae and the face narrowed in the middle. The species also differs from others on the island by its distribution at higher elevations. Other local species are restricted to the coast or rather low elevations.

*Paraclius megalocerus*, new species

FIGURES 204-206

MALE.—Length 3.0 mm; wing 3.3 mm by 1.2 mm. Face 1/2 as wide below as above, yellow covered with white pollen; front bright metallic green with slight yellowish pollen. Palpus and proboscis yellow. Antenna (Figure 204) yellow, more brownish yellow beyond insertion of arista; segment 1 with 2 short points below; segment 3 ca. 2.5 times as long as wide, quadrate in basal 1/3, constricted at arista, narrowed from middle of lower margin into long slender point that reaches middle of arista; arista from basal 1/3 of dorsal edge, scarcely pubescent. Lower postocular setae pale.

Thorax with mesoscutum and scutellum mostly bright metallic bluish green, blackish along sides from suture to wing, humeri and pleura including posterior margin yellow, blackish spot below wing.

Legs including coxae yellow. Femora II and III without distinct anteroventrals. Tibia I with 4

anterodorsals with 2nd near  $1/3$  large, 2 or 3 posterodorsals with last near  $2/3$  large, 2 subapicals posterodorsally and posteriorly; tibia II with 3 anterodorsals and 3 posterodorsals, 1st pair small, 2nd pair at  $1/4$ , 1 median dorsal at  $1/2$ , 1 anteroventral near  $2/5$ , 1 posteroventral near  $2/3$ , 5 apicals; tibia III with 4 anterodorsals and 5 posterodorsals, basal pair very small, 1 ventral near  $2/3$ , 1 preapical middorsally, 2 apicals anterodorsally and ventrally. Tarsi plain; relative lengths of segments from base as tarsus I, 13-5-3-3-3; tarsus II, 17-11-9-6-3; tarsus III, 10-17-11-7-4.

Wing (Figure 206) broadly elliptical, anal lobe distinctly rounded; veins brownish yellow. Vein 2 nearly straight; vein 3 curving slightly backward at tip; vein 4 rather sharply bent near middle of last part, arching slightly, converging with and slightly separated from vein 3 at tip. Crossvein bowed slightly, 1.25 times as long as last of vein 5. Calypter and halter yellow, former with black setae.

Abdomen with tergites mostly dark metallic green or with greenish reflections above, sides of tergites 1-4 rather yellowish translucent; sternites yellow. Hypopygium (Figure 205) yellow except base of peduncle and appendages; lamellae oval with brown margin and sparse pale marginal setae.

**FEMALE.**—Face about 2.5 times as high as wide, not narrower below; antennal segment 3 oval, about as long as high, bluntly pointed.

**TYPE DATA.**—Holotype ♂ from Dominica: Clarke Hall 28 Feb 1964 H. Robinson (USNM 72922). Allotype ♀ from Dominica: Clarke Hall 7 Mar 1964 H. Robinson. Paratypes from Dominica: Clarke Hall 1 ♂ 20 Feb, 2 ♂ 3 Mar, 1 ♀ 11 Mar 1964 H. Robinson; Fond Figue River 1 ♂ 25 Jan, South Chiltern Estate 1 ♀ 2 Feb 1965 W. W. Wirth.

**REMARKS.**—The new species with the large third antennal segment of the male is closely related to *Paraclius pavo* (Aldrich) of St Vincent and would form a second species of the segregate genus *Leptocorypha* of Aldrich. According to the original illustration, *P. pavo* has a stronger bend in the fourth wing vein but this cannot be confirmed. The type that was loaned by the British Museum proves to have lost the head, both wings, all legs, and the hypopygium. It has been possible to confirm only that the pleura and the sides of the abdomen are metallic green. A single female from Dominica may represent a third species in this group. The hind margins of the pleura are yellow but the anterior

surfaces are metallic green. The female also differs from *P. megalocerus* by the face being narrowed below and the lower surface of the first antennal segment bearing many short, black hairs.

### *Paraclius dominicensis*, new species

FIGURES 210, 211

**MALE.**—Length 2.3 mm; wing 2.1 mm by 0.7 mm. Face  $3/5$  as wide below as above, silvery white pollinose; front metallic bluish green dulled with white pollen. Palpus yellow; proboscis brown. Antenna mostly reddish yellow with tip beyond arista blackish; segment 1 with a point toward inner side, scarcely produced below; segment 3 very blunt, about as long as wide; arista from middle of upper edge, with short hairs toward tip. Lower postocular setae white.

Thorax with mesoscutum and scutellum bright metallic green, dulled by yellowish pollen anteriorly, blackish spot on side from behind suture to above wing base; pleura metallic green obscured by gray pollen; scutellum with bristles  $1/2$  as long as abdomen.

Legs mostly yellow; middle coxa with blackish spot externally; distal segments of tarsi appearing darker. Femora II and III with small, usually indistinct anteroventral preapical. Tibia I with a series of ca. 10 small stout anterodorsals, only 2nd rather long, 2 distinct posterodorsals, 2 subapicals posterodorsally and posteriorly; tibia II with 2 large anterodorsals near  $1/5$  and  $2/3$ , 2 large posterodorsals near  $1/5$  and  $4/5$ , a pair of smaller dorsals at base, 1 large median dorsal at  $1/2$ , 1 anteroventral near  $1/2$ , 1 posteroventral near  $4/5$ , 5 apicals; tibia III with 2 large anterodorsals, 4 large posterodorsals, 1 small dorsal pair, 1 small ventral near  $2/3$ , 2 apicals anteriorly and ventrally. Tarsus II basitarsus with a row of ca. 12 short erect curved setae posteroventrally; tarsus III with a few longer setae posteroventrally on segments 1 and 2; relative lengths of tarsal segments from base as tarsus I, 9-4-3-2-2.5; tarsus II, 13-7-5-4-3; tarsus III, 8-12-8-6-3.

Wing (Figure 210) elliptical, anal lobe distinctly rounded; veins brown. Vein 2 nearly straight; vein 3 curving slightly backward at tip; vein 4 bent forward ca.  $30^\circ$  near basal  $1/3$  of last part, arching slightly, ending near tip of vein 3 and not becom-

ing quite parallel. Crossvein straight, perpendicular to base of vein 4, about as long as distance from margin. Calypter and halter yellow, former with black setae.

Abdomen with tergites metallic green with grayish pollen on sides; marginal setae longer than hairs but prominent only on tergite 5. Hypopygium (Figure 211) dark brown with greenish reflections, cylindrical with rounded base; sheath slender, pale, inner subapical projections very small; lamellae oval, pale with brown border and slender sparse marginal hairs; inner appendages pale.

FEMALE.—Face broad, as broad below as above, convex below, ca. twice as high as wide. Middle basitarsus plain.

TYPE DATA.—Holotype ♂ and 3 ♂ paratypes from Dominica: Clarke Hall, malaise trap 21–31 Jan 1965 W. W. Wirth (USNM 72923). Allotype ♀ from Dominica: Grande Savane 1 Feb 1965 W. W. Wirth. Additional paratypes from Dominica: 10 ♂ and 14 ♀ 24 Jan–2 Mar 1964 H. Robinson, 1 ♀ 4 Feb 1964 D. F. Bray, 4 ♀ 11–16 Dec 1964 P. J. Spangler, 1 ♂ malaise trap 8–10 Jan, 2 ♂ 1–10 Feb, 2 ♂ malaise trap 11–20 Feb 1965 W. W. Wirth, all Clarke Hall; 2 ♂ 23 Feb, 22–25 Mar 1965 W. W. Wirth, Cabrit Swamp; 1 ♂ 5 miles NW Mahaut, 22–23 Oct 1966 A. B. Gurney.

REMARKS.—The new species seems most closely related to *Paraclius ovatus* Van Duzee of the eastern United States. Both species have the series of setae on the middle basitarsus of the male, but *P. ovatus* has a hypopygium (Figure 212) with a more sharply rounded base, a broader sheath, and longer inner subapical projections.

### *Paraclius quadrinotatus* Aldrich

FIGURE 213

*Paraclius quadrinotatus* Aldrich, 1902:81.

MALE.—Length 2.4 mm; wing 2.5 mm by 0.8 mm. Face 1/2 as wide below as above, silvery pollinose, slightly bluish near antennae; front metallic dark bluish green with slight grayish pollen. Palpus and proboscis brownish yellow. Antenna mostly yellow, tip of segment 3 brownish; segment 1 with 2 short points below; segment 3 about as long as wide, blunt; arista from middle of dorsal edge. Lower postocular setae white.

Thorax with mesoscutum rather golden pol-

linose along acrostichals, more bluish green with grayish pollen toward sides, distinct quadrate blackish pollinose spots at each end of transverse suture and above each wing base; posterior slope, scutellum, and pleura metallic dark green with yellowish gray pollen; dense pollen on pleura.

Legs mostly yellow; outer surface of coxae II and III and extreme base of coxa I blackish; distal segments of tarsi, especially on middle and hind legs, brownish. Femora II and III with large anterodorsal preapical, only small anteroventrals. Tibia I with 3 large anterodorsals, 1 small and 1 large posterodorsal; tibia II with 3 anterodorsals and 3 posterodorsals paired, basal pair small, 1 median dorsal at 1/2, 1 anteroventral near 1/2, 1 posteroventral near 2/3, 5 apicals; tibia III with 5 anterodorsals and 6 posterodorsals with basal ones paired and small, 3 apicals. Tarsi plain, relative lengths of segments from base as tarsus I, 15–4–3.5–3–4; tarsus II, 25–14–10–7–6; tarsus III, 17–22–15–9–7.

Wing elliptical, anal lobe distinctly rounded; veins brown. Vein 2 nearly straight; vein 3 curving slightly backward at tip; vein 4 rather evenly bent in last 1/3 of distal part, arching slightly to tip. Crossvein nearly straight, nearly perpendicular to last of vein 4, about as long as last of vein 5. Calypter and halter yellow, former with black setae.

Abdomen metallic dark green, slightly blackish along sutures, more whitish pollinose toward sides. Hypopygium (Figure 213) brown with greenish reflections toward base; lamellae and inner appendages blackish brown; lamellae short-triangular with sparse short setae on margin, inner angle narrow with longer setae.

FEMALE.—Face slightly wider, 2/3 as wide below as above; antennal segment 3 scarcely shorter.

COLLECTION DATA.—Dominica: 7 ♂ and 5 ♀ near Layou 27 Jan–10 Mar, 1 ♂ Rodney's Rock 5 Feb 1964 H. Robinson; 2 ♀ 18–24 Mar 1965 W. W. Wirth, 1 ♂ 4 Oct 1966 A. B. Gurney, Layou River mouth.

REMARKS.—The species is known from the coasts of Texas, Florida, and the West Indies.

### *Paraclius affinis*, new species

FIGURE 214

MALE.—Length 3.6 mm; wing 3.3 mm by 1.1 mm.

Face  $1/2$  as wide at suture as at antennae, silvery white pollinose; front metallic bluish with only slight whitish pollen. Palpus yellow; proboscis brownish. Antenna reddish yellow with brownish tip; segment 1 pointed on inside and slightly angular below; segment 3 ovate, rather sharply pointed, about as long as high; arista from middle of dorsal edge, with short hairs toward tip. Lower postocular setae white.

Thorax with mesoscutum bright metallic green, reddish anteriorly, along acrostichals, and at sides behind transverse suture, blackish spot laterally over wing base; scutellum reddish above; pleura metallic green obscured with gray pollen; large black bristle above fore coxa.

Legs mostly yellow; outer surface of middle coxa dark; middle and hind tarsi slightly darker distally. Femur II with additional, very small posteroventral preapical; femur III with additional small anteroventral preapical. Tibia I with 2 or 3 small anterodorsals, 1 slightly larger median dorsal and small posterodorsal near  $1/2$ , 1 very small posterodorsal near base, 2 small apicals posteroventrally and posteriorly; tibia II with large anterodorsals and posterodorsals near  $1/5$  and  $3/5$ , small pair near  $1/8$ , 1 large median dorsal near  $2/5$ , 1 large anteroventral near  $2/5$ , 1 large posteroventral near  $3/5$ , 5 apicals; tibia III with 3 large anterodorsals and 4 large posterodorsals, small dorsal pair near base, small ventral near  $2/3$ , 3 apicals. Tarsi plain, relative lengths of segments from base as tarsus I, 12-5-4-2.5-2.5; tarsus II, 18-11-8-5-4; tarsus III, 11-20-12-8-4.

Wing oblong-elliptical, anal lobe distinctly rounded; veins brown. Vein 2 nearly straight; vein 3 curving slightly backward at tip; vein 4 sharply bent just beyond middle of last part, distinctly arching, convergent with and ending near tip of vein 3. Crossvein nearly straight, perpendicular with bases of veins 4 and 5, as long as last of vein 5. Calypter and halter yellow, former with black setae.

Abdomen with tergites metallic bright green, scarcely darker at sutures, whitish pollen on sides; marginal setae prominent. Hypopygium (Figure 214) brown with green reflections; lamellae brown, triangular; inner appendages reduced to slender rods.

**FEMALE.**—Face as wide below as above, grayish

pollinose, lower part convex. Fore tarsus with relative lengths of segments as 13-5-4-3-3.

**TYPE DATA.**—Holotype ♂ and allotype ♀ from Dominica: Grande Savane, pond margin 20 Mar 1965 W. W. Wirth (USNM 72924). Paratype from Dominica: Macoucheri, river mouth 14 Jan 1965 W. W. Wirth.

**REMARKS.**—The new species is very closely related to *Paraclius filifer* Aldrich from which it differs by the small extra seta on the fore tibia, by the longer fore basitarsus of the male, and by the different hypopygial lamellae. This species and *Enlinia larondei* are unusual among the Dolichopodidae of Dominica by their restricted distribution in a widely available habitat. Each of the two species has its closest relatives widely distributed on the island. I suspect the two species have evolved locally and not yet attained their full potential distributions.

### *Paraclius filifer* Aldrich

FIGURES 215, 216

*Paraclius filifer* Aldrich, 1896:314.

**MALE.**—Length 3.2 mm; wing 3.0 mm by 1.0 mm. Face  $2/3$  as wide at suture as at antennae, silvery white pollinose; front metallic bluish green with slight whitish pollen. Palpus yellow; proboscis brownish. Antenna reddish yellow with brownish tip; segment 1 pointed on inside, slightly angular below; segment 3 ovate, bluntly pointed, about as long as wide; arista from middle of dorsal edge, with short hairs toward tip. Lower postocular setae white.

Thorax with mesoscutum bright metallic green with bluish reflections, reddish anteriorly, along acrostichals, and at sides behind transverse suture, blackish spot laterally over wing base; scutellum reddish above; pleura metallic green obscured with gray pollen; large black seta above fore coxa.

Legs mostly yellow; middle coxa dark outside; middle and hind tarsi sometimes dark from tip of basitarsus. Femur II with additional, very small posteroventral preapical; femur III with additional small anteroventral preapical. Tibia I with 2 or 3 small anterodorsals, 1 slightly larger posterodorsal near  $1/2$ , 1 very small posterodorsal near base, 2 small subapicals posteroventrally and posteriorly;

tibia II with large anterodorsals and posterodorsals near basal  $1/5$  and  $3/5$ , small pair near  $1/8$ , 1 large median dorsal at  $1/2$ , 1 large anteroventral near  $1/2$ , 1 large posteroventral near  $3/4$ , 5 apicals; tibia III with 3 large anterodorsals and 4 large posterodorsals, smaller dorsal pair near base, small ventral near  $2/3$ , 3 apicals. Tarsi plain, relative lengths of segments from base as tarsus I, 9-4-3-2-4; tarsus II, 17-9-7-5-4; tarsus III, 10-17-11-6-4.

Wing (Figure 216) oblong-elliptical, anal lobe distinctly rounded; veins brown. Vein 2 nearly straight; vein 3 curving slightly backward at tip; vein 4 sharply bent just beyond middle of last part, distinctly arching, convergent with and ending near tip of vein 3. Crossvein nearly straight, perpendicular with bases of veins 4 and 5, as long as last of vein 5. Calypter and halter yellow, former with black setae.

Abdomen with tergites metallic bright green, black on sutures, with whitish pollen on sides; marginal setae prominent. Hypopygium (Figure 215) brown with green reflections; lamellae and inner appendages brown; lamellae triangular with long flagellate inside angle and long marginal setae; inner appendages broad, lamellate, shallowly bilobed.

**FEMALE.**—Face as wide below as above, convex below, grayish pollinose. Lengths of segments of fore tarsus as 11-4-3-2-3.

**COLLECTION DATA.**—Dominica: 2 ♀ 25-29 Jan 1964 H. Robinson, 1 ♂ 3 Apr 1966 R. J. Gagné, Clarke Hall, 7 ♂ and 11 ♀ near Layou 27 Jan-12 Feb, 6 ♂ and 1 ♀ Batali River 30 Jan, 2 ♂ near Belfast 31 Jan, 2 ♂ Hodges River 4 Mar, 1 ♂ Grand Bay 13 Mar, 1 ♀ Fond Figes River 17 Mar 1964, all H. Robinson; 1 ♀ 9 Jan, 1 ♂ and 1 ♀ 18-24 Mar 1965 W. W. Wirth, Layou River mouth; 3 ♂ and 1 ♀ 23 Feb, 2 ♂ 22-25 Mar 1965 W. W. Wirth, Cabrit Swamp; 1 ♀ Macoucheri, river mouth 15 Mar 1965 W. W. Wirth.

**REMARKS.**—The species is known from the West Indies and Florida and is common in Dominica near the coast.

### *Paraclius discifer* Aldrich

FIGURES 217-219

*Paraclius discifer* Aldrich, 1902:80.

**MALE.**—Length 3.0 mm; wing 2.7 mm by 0.9 mm.

Face  $3/5$  as wide below as above, white pollinose; front metallic bluish green dulled with white pollen. Palpus and proboscis yellow. Antenna (Figure 219) mostly yellow with brownish tip; segment 1 with only 1 short point below; segment 3 oval, blunt, slightly longer than wide; arista from just beyond middle of dorsal edge,  $2/3$  as long as femur I, with small obovate apical lamella, very narrow in distal  $1/2$  before lamella, thicker at base. Lower postocular setae white.

Thorax with mesoscutum and scutellum mostly bright metallic greenish with slight yellowish pollen, reddish anteriorly and along acrostichals and at sides behind transverse suture, a blackish spot over wing base; pleura metallic green with reddish upper margin and dense yellowish gray pollen.

Legs mostly yellow; base of fore coxa, outer surface of middle and hind coxae, and distal segments of tarsi appearing slightly darker. Femora II and III without distinct anteroventral preapical. Tibia I with 2 or 3 anterodorsals, 1 larger posterodorsal near  $1/2$ , 2 subapicals posterodorsally and posteriorly; tibia II with 3 large anterodorsals and 2 large posterodorsals, a pair of small dorsals near base, 1 anteroventral near  $2/5$ , 5 apicals; tibia III with 3 large anterodorsals and 4 large posterodorsals, a small pair of dorsals near base, 1 indistinct ventral near  $3/5$ , 3 apicals. Tarsi plain, relative lengths of segments from base as tarsus I, 8-2-2-1.5-2; tarsus II, 15-9-7-5-4; tarsus III, 10-15-9-5-4.

Wing (Figure 218) elliptical, anal lobe distinctly rounded; veins yellowish. Vein 2 nearly straight; vein 3 curving slightly backward toward tip; vein 4 bent forward just beyond middle of last part, arching outward, near and parallel with vein 3 at tip. Crossvein straight, perpendicular with last of vein 4,  $3/4$  as long as last of vein 5. Calypter and halter yellow, former with black setae.

Abdomen with tergites metallic green, with reddish reflections on midline and near sutures, sutures narrowly blackish, whitish pollen on sides; marginal setae longer than hairs but not prominent. Hypopygium (Figure 217) dark brown with green and reddish reflections and grayish pollen; lamellae and inner appendages brown; lamellae triangular with very attenuate inside angle often lying against ventral surface of capsule.

**FEMALE.**—Face scarcely narrowed below; arista not lamellate, bearing short hairs. Tibia III with



posteroventral near 3/5. Abdomen with basal sternites pale brown.

COLLECTION DATA.—Dominica: 2 ♀ near Layou 27 Jan–12 Feb, 5 ♂ and 4 ♀ Rodney's Rock 5 Feb 1964 H. Robinson.

REMARKS.—The species has been reported from Central America and the West Indies. The species belongs to the distinctive group with a small apical lamella on the arista of the male. A closely related species, *Paraclius claviculatus* Loew of eastern North America, has been reported from Grenada by Aldrich (1902). The latter species differs by the lack of the thinner distal portion of the male arista (Figure 220).

### Genus *Pelastoneurus* Loew

Medium sized with mostly metallic green or blackish body, setae black. Face not narrowed below, convex below transverse suture, pollinose, lower margin only slightly produced downward; front broad, broader above. Pseudotracheae 6, geminately sclerotized. Antenna with segment 1 setose above; segment 2 produced on sides and very short below; segment 3 enlarged; arista dorsal, feathered with long hairs in upper and outer rows. Head scarcely excavated behind vertex. Postocular setae uniseriate.

Thorax with mesoscutum rather evenly rounded, many small setae near anterior margin; acrostichals small, biseriate; 5 pairs of distinctly enlarged dorso-

centrals; scutellum with 2 large bristles, small seta on lateral margin; 1 large seta over fore coxa. Fore and middle coxae with numerous hairs anteriorly, bristles distally; hind coxa with 1 larger and 1 very small bristle. Middle and hind femora with preapical seta dorsally and often smaller preapical anteroventrally; tibia often with 2 ventrals; hind basitarsus without dorsal bristles; smaller setae of middle and hind tarsi often in obvious close-set series.

Wings oval or elliptical. Veins 2 and 3 diverging from base or becoming parallel; vein 4 often distinctly bent forward in last part, convergent with vein 3 distally, ending distinctly before wing apex; crossvein perpendicular to bases of vein 4 or 5, about as long as or longer than last of vein 5; vein 6 represented by fold.

Abdomen usually longer than thorax in male, shorter in female, tapering; tergites with prominent marginal setae. Hypopygium large, reaching forward under preabdomen to near base, often fitting into ventral recess of preabdomen; lamellae broad or slender, sometimes appendaged. Female genitalia with crest of dornen above.

REMARKS.—*Pelastoneurus* and the related genera *Proarchus* Aldrich and *Sarcionus* Aldrich form a group restricted to the Western Hemisphere that is notable for the feathered arista. The group is represented in Dominica by the following three species of *Pelastoneurus*.

### Key to the Species of *Pelastoneurus* in Dominica

1. Wing vein 4 gradually and evenly curving forward in last part; costa slightly to distinctly enlarged in first part; male with face shallowly grooved in lower part and with claw of fore tarsus much enlarged and recurved; hypopygial lamellae elliptical ..... *P. unguiculatus*  
Wing vein 4 evenly curved or distinctly bent in last part; costa not enlarged in first part; male with lower face evenly bulging and with claw of fore tarsus not enlarged; hypopygial lamellae reduced to a linear appendage ..... 2
2. Wing vein 4 bending before middle of last part; scutellum only slightly darker on raised middle part; 2 ventral bristles on middle tibia ..... *P. argentifer*  
Wing vein 4 bending forward beyond middle of last part; scutellum distinctly black on raised middle part and with yellowish green surface on each side; 1 ventral bristle on middle tibia ..... *P. taeniatus*

### *Pelastoneurus unguiculatus* (Aldrich)

FIGURE 222

*Poecilobothrus unguiculatus* Aldrich, 1896:310.

MALE.—Length 4.3 mm; wing 3.6 mm by 1.2 mm.

Face white pollinose with brownish pollen just below antennae, lower 1/2 of face slightly wider and produced in three parts, a lump to each side at suture and a median fold ending below in forward projecting point on lower margin; front metallic

violet with no pollen. Palpus grayish pollinose with pale margin; proboscis brown. Antenna mostly black with some yellow below on segments 1 and 2 and sometimes on base of 3; segment 1 with a long point inside and a smaller point below; segment 3 oval with narrowly rounded tip; arista from near base of upper edge, about  $\frac{3}{4}$  as long as height of face. Lower postocular setae white.

Thorax mostly metallic dark green, dulled with brownish pollen above, small black spots laterally behind transverse suture and over wing base; lateral depression of mesoscutum and pleura obscured by gray pollen.

Legs mostly yellow; coxae except tips, diffuse area posteriorly on fore femur and fore tibia, tips of femora II and III, spots at bases of tibial bristles, and tarsi from tips of basitarsi brown or blackish; coxae grayish pollinose. Fore and middle femora with small posteroventral preapical seta, middle and hind femora without distinct anteroventral preapical. Tibia I with 3 small anterodorsals, 2 somewhat larger posterodorsals, 3 apicals dorsally posteriorly and ventrally; tibia II with a pair of small dorsals and pair of large dorsals near base, a small anterodorsal followed by a large pair near  $\frac{1}{3}$ , large anterodorsal near  $\frac{3}{5}$ , 1 large posterodorsal near  $\frac{4}{5}$ , large anteroventral near  $\frac{1}{3}$ , large posteroventral near  $\frac{2}{3}$ , 5 apicals; tibia III with 4 large anterodorsals and 4 large posterodorsals more or less paired, a small pair of dorsals near base, 1 anteroventral near  $\frac{2}{3}$ , 3 apicals anterodorsally, posterodorsally, and ventrally. Tarsus I 5th segment with ventral lump in basal  $\frac{1}{2}$ , inner claw much enlarged and bent back against lump; relative lengths of tarsal segments from base as tarsus I, 10-5-3-3-6; tarsus II, 18-10-8-6-7; tarsus III, 13-18-12-9-7.

Wing elliptical, anal lobe distinctly rounded; surface with brownish tinge, veins brown. Costa only slightly enlarged near base; veins 2 and 3 slightly curving backward; last of vein 4 curving evenly toward vein 3. Crossvein perpendicular to base of vein 4, slightly shorter than the distance from margin. Calypter and halter yellow, former with black setae.

Abdomen metallic dark green with whitish pollen on sides, blackish along sutures. Hypopygium (Figure 222) elongate, black; lamellae and inner appendages blackish; former narrowly elliptical,

covered with many black setae which are longer along apical and lower margins.

**FEMALE.**—Face less than twice as high as wide, lower  $\frac{3}{5}$  strongly and rather evenly convex; face and palpi distinctly brown pollinose, slightly lighter at sides. Tibia I with 2 or 3 posterodorsals with last quite large, tarsus I plain, lengths of segments as 13-5-4-3-5. Wing with costa distinctly enlarged in basal part.

**COLLECTION DATA.**—Dominica: 4 ♂ and 3 ♀ near Layou 27 Jan-25 Feb 1964 H. Robinson; 1 ♂ Cabrit Swamp 3 Nov 1964 P. J. Spangler.

**REMARKS.**—The species is known from the West Indies, Mexico, Central America, and Argentina. It is very distinct in the form of the male face and fore tarsus.

### *Pelastoneurus argentifer* Aldrich

FIGURE 221

*Pelastoneurus argentifer* Aldrich, 1896:313.

**MALE.**—Length 3.6 mm; wing 3.4 mm by 1.1 mm. Face broad, bulging, and slightly broader in lower  $\frac{1}{2}$ , shining metallic green above, bulge silvery pollinose, lower margin straight; front blackish green. Palpus broad, blackish with slight whitish pollen on edge, with numerous short black setae; proboscis black. Antenna black with slight yellow below on segment 2 and tip of segment 1; segment 1 with a longer point inside and a smaller point below; segment 3 short-oval with very blunt tip; arista from near base of upper edge, ca.  $\frac{3}{4}$  as long as face. Lower postocular setae white.

Thorax blackish with green reflections and slight brownish pollen above, more dark-purple posteriorly, scutellum more green with yellowish reflections to each side, a black streak above wing base, white pollinose spots at lateral depression of mesoscutum and on outer hind corner; pleura more metallic green obscured with white pollen.

Legs mostly yellow; middle and hind coxae, extreme base of fore coxa, fore and middle tarsi from tip of basitarsus, and hind leg from tip of tibia black; coxae whitish pollinose. Femora I and II with additional, very small preapical posteroventrally; femur III with additional anteroventral preapical; femora II and III with long, very slender, erect, curved setae along ventral surface. Tibia I with 3 small anterodorsals, 2 posterodorsals 1 small

near 1/4 and 1 large near 1/2, 3 small apicals; tibia II with 3 large anterodorsals near 1/5, 2/5, and 3/5, 1 small near 2/3, 3 large posterodorsals near 1/5, 1/3, and 3/4, a small dorsal pair near 1/8, 1 large anteroventral near 1/2, 1 large posteroventral near 2/3, 5 rather large apicals; tibia III with 4 large anterodorsals near 1/7, 1/3, 2/5, and 2/3, 1 very small near base, 3 large posterodorsals near 1/7, 1/3, and 3/5, 1 smaller near 2/3, 1 smaller ventral near 3/4, 3 large apicals. Tarsi plain, relative lengths of segments from base as tarsus I, 10-5-4-3-4; tarsus II 14-9-7-5-5; tarsus III, 12-15-11-7-6.

Wing elliptical, anal lobe moderately rounded; surface with very slight brownish tinge, veins brown. Costa not enlarged near base; veins 2 and 3 curving slightly backward; last of vein 4 bent forward before middle, ending close to vein 3 and well before wing tip. Crossvein perpendicular to base of vein 4, slightly shorter than last of vein 5. Calypter and halter yellow, former with black setae.

Abdomen metallic green with whitish pollen on sides, scarcely darker along sutures. Hypopygium (Figure 221) elongate, brownish green dulled with slight brownish pollen; lamellae with small pale triangular base bearing very large linear, densely setiferous appendage on outer edge near base; inner appendages forming prominent black knob.

**FEMALE.**—Face nearly like male but slightly broader, with only small touch of brown at top of bulge; palpus more whitish; antennal segment 3 slightly shorter. Tibia I with only 2 posterodorsals, 1 small near 1/4, 1 large near 1/2.

**COLLECTION DATA.**—Dominica: 12 ♂ and 6 ♀ Cabrit swamp, 22-25 Mar 1965, W. W. Wirth.

**REMARKS.**—The species is known from the West Indies, Mexico, and Central America.

### *Pelastoneurus taeniatatus* Becker

FIGURE 223

*Pelastoneurus taeniatatus* Becker, 1922:70.

**MALE.**—Length 2.4 mm; wing 2.7 mm by 0.9 mm. Face about 3 times as high as median width, only slightly wider above and below, furrowed along middle of upper part, convex below, mostly silvery pollinose, brownish just below antennae, lower margin straight; front mostly dark violet, without pollen. Palpus and proboscis dark brown, former

with pale reflections. Antenna dark with lower surfaces of segments 1 and 2 and base of 3 reddish yellow; segment 1 with long point inside, lower tooth vestigial; segment 3 oval, blunt, scarcely longer than high; arista from near base of upper edge, 3/4 as long as height of face. Lower postocular setae white.

Thorax mostly dark brown; mesoscutum dulled with brown pollen, black at sides over wing bases; scutellum with raised median black square, green with bright yellow reflections on each side; lateral depression of mesoscutum and pleura gray pollinose.

Legs mostly yellowish; middle and hind coxae and base of fore coxa blackish with gray pollen; tip of femur III, spots at bases of bristles of tibia II and III, last segments of fore tarsus, and tarsi II and III from tips of basitarsi rather brownish. Femur III with distinct anteroventral preapical. Tibia I with 2 small anterodorsals, 1 small and distally 1 larger posterodorsal, 3 small apicals posterodorsally and posteroventrally; tibia II with 3 large, evenly spaced anterodorsals, 3 large posterodorsals near 1/5, 2/5, and 4/5, small dorsal pair near base, 1 anterodorsal near 1/2, 5 apicals; tibia III with 4 large anterodorsals and 4 large posterodorsals, 2nd anterodorsal and last posterodorsal often smaller, very small pair of dorsals near base, anteroventral near 2/3, 3 apicals anterodorsally, posterodorsally, and anteroventrally. Tarsi plain, relative lengths of segments from base as tarsus I, 8-4-3-2-2.5; tarsus II, 11-7-6-4-4; tarsus III, 10-13-9-6-5.

Wing elliptical, anal lobe distinctly rounded, veins brown. Costa not enlarged near base; vein 2 nearly straight; vein 3 curving slightly backward distally; vein 4 with even but distinct curve forward just beyond middle of last part, curved slightly backward and less convergent with vein 3 near extreme tip. Crossvein nearly perpendicular with base of vein 4, slightly shorter than last of vein 5. Calypter and halter yellow, former with black setae.

Abdomen slender, shining black with small patches of metallic green obscured by whitish pollen on middle of side of each tergite. Hypopygium and inner appendages (Figure 223) dark brown; lamellae pale at base with the linear blades dark brown with dark, long-curved, marginal setae.

**FEMALE.**—Face about 1/2 as wide as high, brown pollinose in broad stripe down middle. Distal posterodorsals of tibia I longer.

**COLLECTION DATA.**—Dominica: 3 ♂ and 7 ♀ near

Layou 12 Feb–10 Mar 1964 H. Robinson; 1 ♀ Clarke Hall 12–17 Nov 1964 P. J. Spangler; 3 ♂ and 2 ♀ Cabrit Swamp 22–25 Mar 1965 W. W. Wirth.

REMARKS.—The species is presently known from only the Virgin Islands and Dominica. The scutellar marking is very obvious on the specimens in the field and must serve as a guide to males in copulation.

### Genus *Tachytrechus* Haliday

Medium sized to large with mostly metallic green or brownish body, setae black. Face elongate with or without median constriction, usually flattened in lower part, lower margin curved, sometimes produced downward below lower margin of eyes; front small, broad, broader above. Pseudotracheae 6, geminately sclerotized. Antenna usually high on head; segment 1 setose above; segment 2 produced on sides and very short below; segment 3 enlarged; arista dorsal or from upper corner, sometimes with lamellae or nodular thickenings without noticeable hairs. Head scarcely excavated behind vertex. Post-ocular setae uniseriate.

Thorax with mesoscutum rather evenly rounded, with many small setae near anterior margin; acrostichals biseriate, mostly small, larger posteriorly; 5 or 6 distinct pairs of dorsocentrals, sometimes short; scutellum with 2 large bristles, small seta on lateral margin; 1 large seta over fore coxa. Fore and middle coxae with numerous hairs anteriorly and bristles distally; hind coxa with 1 larger and 1 very small external bristle. Femora II and III with anterodorsal preapical which is sometimes preceded by a series; no dorsal bristles on hind basitarsus but usually 1 short distinct ventral near base; fore tarsi often slightly stouter than other tarsi.

Wing oval or elliptical. Vein 2 nearly straight or both veins 2 and 3 bending backward at tip; vein 4 usually bending forward in last part and partially convergent with vein 3, ending near or distinctly before tip of wing; crossvein usually perpendicular to base of vein 4, as long as or longer than its distance from the margin; vein 6 represented by fold.

Abdomen of male slightly longer than thorax, tapering distally; tergites with slightly larger marginal setae. Hypopygium large, reaching forward under preabdomen to near base, with prominent

outer lamellae. Female genitalia with crest of dornen above.

REMARKS.—The concept of the widely distributed genus has recently been extended to include the genus *Polymedon* Osten Sacken and many species that had been placed in *Paraclius* (Robinson, 1964, 1970b). Two species from the Lesser Antilles were erroneously placed in *Tachytrechus* and should be sought in this treatment under *Paraclius*. The following key provides distinctions for the eight species of *Tachytrechus* known from the Lesser Antilles. The following five species are known from Dominica. (See also key, p. 120.)

### *Tachytrechus seriatus*, new species

FIGURE 199

MALE.—Length 4.0 mm; wing 3.8 mm by 1.2 mm. Face silvery white pollinose, with upper 1/2 narrowed to 1/3 as wide as height, depressed along midline; lower 1/2 demarcated with sharp fold, broadly oval, twice as wide as upper 1/2, flat, reaching slightly below lower level of eyes; front obscured by dense whitish pollen. Palpus and proboscis blackish brown. Antenna black with brownish reflections; segment 1 as long as upper width of face, with few setae above; segment 3 oval, 1.5 times as long as wide, bluntly pointed; arista from distal 1/4 of dorsal edge, as long as 3 segments together. All but upper 5 postocular setae white.

Thorax bright metallic dark green, reddish spot on side of mesoscutum from behind suture to above wing base, lateral depression of mesoscutum and pleura nearly obscured with whitish pollen; 5 pairs of slender dorsocentrals.

Legs with coxae except tips, femora, and all of hind leg except trochanter blackish, partly with greenish reflections and whitish or gray pollen; fore and middle tibiae and tarsi yellowish brown, tibiae darker dorsally and toward base. Femur II broad with small anterodorsal preapical, a crest of ca. 7 short stout setae anteroventrally on basal 1/2; femur III with a row of 9 or 10 long anterodorsal setae starting near base and ending in preapical seta, only a small anteroventral preapical. Tibia I plain, with 3 small anterodorsals, 2 small posterodorsals, 1 larger posteroventral near 1/2, 3 small apicals posterodorsally and posteroventrally; tibia II very slightly bent near 3/5, with 4 small antero-

dorsals, 2 small posterodorsals in basal 1/3 and another near 3/4, stout ventrals near 2/5 and subapically, with 4 very short, erect ventral setae which are opposite crest of femur, 3 apicals with only 1 posteroventrally long, anterior surface with longer reclining hairs; tibia III with 3 or 4 small anterodorsals and 3 or 4 small posterodorsals in basal 2/3, 7 or 8 short setae ventrally in indistinct series, subapical seta dorsally and 2 apicals anterodorsally and anteroventrally. Tarsus II slightly twisted with hairs somewhat longer and more erect, especially on anterior surface; relative lengths of tarsal segments from base as tarsus I, 12-5-4-4-5; tarsus II, 12-7-6-4-5; tarsus III, 13-13-9-6-7.

Wing elliptical, anal lobe distinctly rounded; veins and wing surface brown. Costa not enlarged in first part; veins 2 and 3 bending rather distinctly backward near tip, remaining rather parallel; vein 4 bending forward before middle of last part, be-

coming longitudinal again in distal 1/4, ending just before tip of wing, distinctly separated from tip of vein 3. Crossvein nearly perpendicular to parts of vein 5, 1.3 times as long as distance from margin. Calypter and halter yellow, former with short crest of ca. 12 black setae.

Abdomen slender, gradually tapering, middorsum and sutures black, middle of sides of tergites dark metallic green with brownish pollen above and whitish pollen below; marginal setae slender. Hypopygium (Figure 199) black with some grayish pollen, broadly oval; lamellae broadly obovate, white with black border and white marginal setae.

FEMALE.—Face dark brownish or greenish obscured by dense gray pollen, upper 1/2 about as wide as high, concave; lower 1/2 rather convex, becoming twice as wide below then narrowed to blunt point reaching shortly below lower level of eyes; antennal segment 3 slightly shorter. Femur II

### Key to the Species of *Tachytrechus* in the Lesser Antilles

1. Hind femur with ca. 8 large setae in series preceding preapical; tip of wing vein 2 bending backward, vein 4 ending near tip of wing and more widely separated from vein 3; middle tibia and tarsus of male slightly distorted with longer hairs anteriorly (Dominica) ..... *T. seriatus*  
Hind femur with only single preapical anterodorsally; tip of wing vein 2 nearly straight, tips of veins 3 and 4 very close; middle tibia and tarsus of male without long hairs anteriorly .2
2. Wing with costa not enlarged in first part; male and female faces nearly alike, constricted above and not reaching below lower level of eyes .....3  
Wing with costa distinctly enlarged in first part, less so in female; male face usually reaching below lower level of eyes; female face not distinctly narrowed above .....5
3. Femora and tibiae yellow; face silvery white pollinose; tergite 5 of male abdomen with prominent flap of exerted sutural tissue; male fore tarsus with enlarged pulvilli (Dominica) ..... *T. calyptopygeus*  
Femora blackish; face yellow or brownish pollinose; tergite 5 of male without special flap; male fore tarsus without enlarged pulvilli .....4
4. Tibiae yellowish; antenna partly yellowish; fore tibia of male with distinct glabrous flattened stripe above; hypopygial lamellae rounded (Grenada) ..... *T. fuscicornis*  
Tibiae greenish black; antenna black; fore tibia of male without distinct glabrous stripe dorsally; hypopygial lamellae with long curved lobe on upper margin (Grenada, Dominica) .. *T. nigripes*
5. Wing vein 4 beyond bend of last part strongly arching; hypopygial lamellae yellowish; male face not reaching lower level of eyes (Grenada) ..... *T. abdominalis*  
Wing vein 4 beyond bend of last part slightly arched or nearly straight; hypopygial lamellae brown or black; male face reaching below lower level of eyes .....6
6. Antenna mostly yellow; calypteral setae of male not specialized (St. Vincent) ..... *T. superbus*  
Antenna mostly brown or black; calypteral setae of male very long in distinct tuft .....7
7. Femora and fore coxa yellow, hind basitarsus as long as following segment; face of male narrowed above middle with distinct transverse suture; male wing with hind margin slightly lobed (Dominica) ..... *T. perornatus*  
Femora and fore coxa blackish, hind basitarsus 3/4 length of following segment; face of male scarcely narrowed above, without distinct transverse suture; male wing without distinct lobe on hind margin (Dominica) ..... *T. planifacies*



without ventral crest; tibia II plain with 5 small ventrals; tarsus II plain with lengths of segments as 15-7-5-4-4. Wing surface scarcely brownish.

TYPE DATA.—Holotype ♂ from Dominica: Fond Figs 16 Mar 1964 H. Robinson (USNM 72925). Allotype ♀ from Dominica: Fond Figs, rain forest 3 Feb 1965 W. W. Wirth. Paratypes from Dominica: 4 ♂ and 3 ♀ near Sylvania 9-10 Feb, 2 ♂ near Administrator's Cabin, road to Rosalie 16 Feb, 2 ♂ and 3 ♀ Freshwater Lake 23 Feb 1964 H. Robinson; 1 ♀ Fond Figs River 9-12 Mar 1965 W. W. Wirth.

REMARKS.—The new species is distinctive locally in the series of 9 or 10 anterodorsal setae on the hind femur and in the black-bordered, white hypopygial lamella.

### *Tachytrechus calyptopygeus*, new species

#### FIGURE 202

MALE.—Length 3.4 mm; wing 3.2 mm by 1.1 mm. Face silvery white pollinose with some brown pollen near antennae, face constricted to width of antennal segment 1 at upper 1/5, gradually wider below to middle of clypeus, becoming as wide as base of front; clypeus forming lower 1/3 of face, broadly rounded below and reaching down to about lower level of eyes; front dark green dulled with yellowish pollen. Palpus and proboscis black. Antenna black; segment 1 slightly yellow below, scarcely longer than its apical width; segment 3 very short and blunt, slightly higher than long; arista from distal 1/3 of upper edge. All but upper 5 or 6 postocular setae white.

Thorax dark metallic green with bluish reflections and sparse brownish pollen above, lateral depression of mesoscutum and pleura nearly obscured with whitish pollen; 5 distinct pairs of dorsocentrals.

Legs mostly pale; middle and hind coxae brownish with whitish pollen; bases or sometimes all of fore and middle tibiae, at least base and tip of hind tibia, and middle basitarsus infuscated; fore and middle tarsi and all hind tarsus black. Femur I with a few longer setae posteroventrally near tip; femora II and III with only simple anterodorsal preapicals, ventral hairs not pale. Tibia I with 4 anterodorsals and 2 or 3 posterodorsals, 1 or 2 posteroventrals near 1/2, 3 apicals posteriorly, all rather

short and slender; tibia II with 4 anterodorsals, 2 or 3 posterodorsals, 1 median dorsal near 2/5, 5 apicals, all large except 1 or 2 nearest base; tibia III with 4 large anterodorsals and 1 small basal, 3 large posterodorsals, 1 median dorsal at 5/6, 2 apicals anteriorly, series of 8 or 9 shorter, rather indistinct ventrals. Tarsus I with dorsal hairs erect, segment 5 with long dorsal setae, pulvilli slightly but distinctly enlarged; tarsus II slender without specialized flattened areas; relative lengths of tarsal segments from base as tarsus I, 8-3-3-2-4; tarsus II, 18-8-6-3-4; tarsus III, 15-17-10-6-5.

Wing narrowly elliptical, anal lobe evenly rounded becoming straight from basal 1/4 to near middle; surface brownish tinged, veins brown. Costa not enlarged; vein 2 rather straight; vein 3 bending slightly backward distally; vein 4 bending distinctly forward at middle of last part, arching slightly and becoming less convergent near tip, ending near tip of vein 3 and distinctly before wing apex. Crossvein perpendicular to base of vein 5, ca. 1.5 times as long as last of vein 5. Calypter pale with simple crest of 8-10 black setae; halter yellow.

Abdomen rather stubby; tergites metallic dark green with whitish pollen on sides, black along hind margins of tergites with stout, rather appressed setae, suture of tergite 4 slightly expanded, tergite 5 much longer with following suture greatly exerted into flap that covers posterior 1/2 of tergite. Hypopygium (Figure 202) blackish brown, broad; lamellae black, rather quadrate or triangular with pointed tip, upper margin and submarginal surface with dense fringe of short dark setae, more distal setae longer and many with small hooked tips.

FEMALE.—Face more metallic dark green obscured with gray pollen, shape similar to male but upper constriction only 1/2 as narrow. Fore tarsus without more erect hairs or long setae, pulvilli not enlarged; tibia II with distinct ventral near 3/4. Wing scarcely tinged with brown, hind margin more evenly rounded. Tergites of abdomen more equal, without exerted sutures.

TYPE DATA.—Holotype ♂, allotype ♀, 16 ♂ and 6 ♀ paratypes from Dominica: Deux Branches, Pagua River 3 Feb 1964 H. Robinson (USNM 72926). Additional paratypes from Dominica: 4 ♂ Deux Branches, Pagua River 2 Feb, 6 ♂ and 1 ♀ La Ronde River 15 Feb, 1 ♂ Trafalgar Falls 15 Mar 1964 H. Robinson; 2 ♂ 16 Mar 1964 H. Robin-

son, 1 ♂ and 2 ♀ 9 Feb, 1 ♀ light trap 13 Mar 1965 W. W. Wirth, all Fond Figues River.

REMARKS.—The new species is very distinct by the presence of the exerted sutures of the male abdomen. No possible function is known for the flap of tissue, but it is one of the parts highly favored by psocids attacking the mounted specimens.

***Tachytrechus nigripes* (Aldrich)**

FIGURE 203

*Paracilius nigripes* Aldrich, 1902:78.

MALE.—Length 3.5 mm; wing 3.3 mm by 1.1 mm. Face pale yellow pollinose, constricted to width of antennal segment 1 at upper 1/3, gradually wider to lower 1/3 of clypeus becoming as wide as face at base of antennae; clypeus forming a little less than lower 1/3 of face, broadly rounded below and reaching about to lower level of eyes; front dark metallic green partially obscured by yellowish pollen. Palpus and proboscis black. Antenna black; segment 1 about half as long as greatest width of face, with 2 short points below; segment 3 very short, not as long as high, with broadly rounded tip; arista from just before middle of dorsal edge. All but 4 or 5 upper postocular setae white.

Thorax dark metallic green above, shining, dulled with some brownish pollen, lateral depression of mesoscutum and pleura nearly obscured with white pollen; 5 pairs of dorsocentrals.

Legs almost entirely blackish green partly dulled with some grayish pollen, tissues between coxae and trochanters and a short dorsal stripe on fore tibia noticeably yellowish. Ventral hairs on femora slightly paler and more erect. Tibia I with 4 rather small anterodorsals and a posterodorsal near 1/2, 2 small posterodorsals near 1/4 and beyond 1/2, apicals distinct; tibia II with 3 large anterodorsals and 1 smaller near base, 2 posterodorsals near 1/4 and 2/3, median dorsal near 1/3, smaller ventral beyond 1/2, 5 apicals; tibia III with small dorsal pair near base, 4 large anterodorsals and 3 large posterodorsals, 1 larger median dorsal near 3/4, ventrals indistinct, 2 apicals anteriorly and anterodorsally. Tarsus II slightly flattened below at tip of segment 2 and base of segment 3; ventral seta of basitarsus III unusually prominent; relative lengths of tarsal segments from base as tarsus I, 12-4-3-2-4; tarsus II, 16-7-7-4-4; tarsus III, 12-12-9-6-5.

Wing elliptical with distinctly rounded anal lobe and evenly rounded hind margin; surface tinged with brown, veins brown. Costa not enlarged in first part; vein 2 nearly straight; vein 3 curving slightly backward toward tip; vein 4 bending forward beyond middle of last part, arching slightly and remaining convergent with vein 3, turned slightly forward again at extreme tip and ending far before tip of wing. Crossvein perpendicular to base of vein 5, slightly longer than distance from hind margin. Calypter pale with simple crest of ca. 10 short black setae; halter yellow.

Abdomen metallic green with middorsum and hind margins of tergites darker, whitish pollen on lower part of sides; setae of tergite hind margins rather indistinct. Hypopygium (Figure 203) black, oblong and very broad; lamellae dark brown, generally oblong with broad deep sinus separating broad, setiferous basal lobe from inner, curved, sharp-pointed, glabrous lobe; inner appendage with branching yellowish tips.

FEMALE.—Face slightly wider, at narrowest part twice as wide as antennal segment 1. Tarsus II plain, segments otherwise similar to male with lengths as 17-8-6-4-5. Wing less brownish, slightly broader with crossvein not longer than distance from margin.

COLLECTION DATA.—Dominica: 2 ♂ and 2 ♀ 3 Mar, 1 ♀ 12 Mar Layou River below Cascade Gardens, 3 ♂ and 1 ♀ Trafalgar Falls 15 Mar 1964 H. Robinson; 1 ♀ 23 Jan 1965 W. W. Wirth, 1 ♂ 400' 29 Apr 1966 R. J. Gagné, both Fond Figues River.

REMARKS.—The species is known from Grenada and Dominica and has been reported from Guatemala, Panama, and Peru. Perhaps the most closely related species is *Tachytrechus angulatus* (Van Duzee), of the eastern United States, which has the same basic form of face and hypopygial lamella but has white pollen on the face.

***Tachytrechus perornatus*, new species**

FIGURE 200

MALE.—Length 4.0 mm; wing 3.9 mm by 1.3 mm. Face with upper 1/3 narrow, twice as long as wide with median longitudinal furrow, gray pollinose; lower 2/3 sharply demarcated, flat or somewhat concave, oval, becoming twice as wide as upper

part, projecting nearly its width below lower level of eyes, silvery white pollinose; front and vertex with silvery white pollen. Palpus and proboscis brown. Antenna brown; segment 1 slightly longer than width of upper face, with many short setae above; segment 3 oval, scarcely longer than wide, bluntly pointed; arista from distal 1/3 of upper edge, slightly shorter than the 3 segments together. All but upper 5 or 6 postocular setae white.

Thorax dark metallic green, mesoscutum with some brownish pollen, reddish toward side from suture to base of wing, lateral depression and pleura nearly obscured with whitish pollen; 6 or (rarely) 7 pairs of slender dorsocentrals.

Legs with fore coxa, femora, and fore and middle tibiae yellow; outer surface of middle and hind coxae, extreme tip of femur III, distal 1/3 of tibiae I and II, hind tibia, and all of tarsi brownish to black. Femora II and III with only single large anterodorsal preapicals, ventral hairs rather pale. Tibia I with 3 small anterodorsals, 2 very small anterior apicals and 1 long, very slender, brownish apical posteriorly; tibia II basal 1/2 with 3 anterodorsals, 2 small posterodorsals, and 1 large posteroventral, group near 2/3 including 1 anterodorsal, 1 posterodorsal, and 1 small anteroventral, 5 apicals; tibia III with 4 large anterodorsals, 4 or 5 large posterodorsals, ca. 4 rather indistinct ventrals, 3 apicals anterodorsally anteriorly and ventrally. Tarsi plain, tarsus II without flattened surfaces on segments 2 and 3; relative lengths of tarsal segments from base as tarsus I, 12-4-3-3-4; tarsus II, 18-8-6-4-6; tarsus III, 14-15-10-7-6.

Wing oblong at base with quadrate anal lobe, shallow sinus beyond last of vein 5 continuing to narrowly rounded tip; surface of wing faintly brownish, veins brown. Costa with single long enlargement ending before juncture of vein 1; vein 2 rather straight; vein 3 slightly flexed distally; vein 4 distinctly bent near basal 1/3 of last part, nearly straight beyond bend, converging with and ending very near tip of vein 3 well before wing apex. Crossvein perpendicular with base of vein 5, about as long as distance from hind margin. Calypter pale with black margin, bearing dense tuft of nearly 100 long slender setae; halter yellow.

Abdomen gradually tapering; tergites dark green with whitish pollen on sides, hind margins black with long setae. Hypopygium (Figure 200) blackish

brown, paler on ventral surface, with pale brownish pollen dorsally; lamellae brown, long-triangular, shorter upper edge with very long, slender, pale brownish setae, longer inner or lower margin with 3 or 4 short teeth, the teeth and inner surface bearing many long, slender, inward-directed, blunt-ended brownish setae.

**FEMALE.**—Face grayish pollinose, scarcely narrower above, narrowly rounded lower margin reaching just below lower margin of eyes; antennal segment 1 slightly shorter than width of face; segment 3 slightly shorter than high. Tibia I with posterior apical shorter and black. Enlargement of costa slight, hind margin of wing more evenly rounded, anal lobe evenly rounded. Calypter with fewer and shorter setae.

**TYPE DATA.**—Holotype ♂, 7 ♂ and 3 ♀ paratypes from Dominica: La Ronde River 15 Feb 1964 H. Robinson (USNM 72927). Allotype ♀ and 2 ♂ paratypes from Dominica: Fond Figues River 9-12 Mar 1965 W. W. Wirth. Additional paratypes from Dominica: 1 ♂ Clarke Hall 19 Feb 1964 H. Robinson; 1 Trafalgar Falls 15 Mar 1964 W. W. Wirth.

**REMARKS.**—The new species seems most closely related to *Tachytrechus nimius* (Aldrich) of Mexico, Central America, and South America. The latter species differs by many features, including the all-yellow tibiae, the comparatively longer lower portion of the male face, the more quadrate hypopygial lamellae, and the flattened surfaces ventrally of segments 2 and 3 of the male middle tarsus.

### *Tachytrechus planifacies*, new species

FIGURE 201

**MALE.**—Length 4.0 mm; wing 3.8 mm by 1.2 mm. Face silvery white pollinose, scarcely narrowed in upper 2/3, nearly as wide as length of antennal segment 3, slightly concave; clypeus continuous with face, narrower below, extending about 1/2 as much as its width below lower level of eyes; front and upper vertex white pollinose, middle of front flattened and appearing dark from above. Palpus and proboscis brown. Antenna brownish, yellow at base of segment 3; segment 1 nearly as long as width of face, with 2 points below; segment 3 rather oblong, 1.5 times as long as high, broadly rounded

apically; arista from distal 1/4 of dorsal edge. All but upper 5 or 6 postocular setae white.

Thorax metallic green partially dulled above by brownish pollen, lateral depression of mesoscutum and pleura nearly obscured with whitish pollen; 5 pairs of dorsocentrals.

Legs mostly brown; trochanters yellow; coxae with whitish pollen, grayish pollen on femora. Femora II and III with single distinct preapical, with pale hairs below near base; pale hairs of femur II prominent, ca. 1/3 as long as width of femur. Tibia I with 4 anterodorsals, 2 or 3 small posterodorsals, 3 apicals posteriorly; tibia II with 4 anterodorsals, all but basal one large, 1 large median dorsal near 1/3, large posterodorsal and ventral near 2/3, 2 smaller ventrals in basal 1/2, 5 apicals; tibia III with 4 large anterodorsals, 3 large posterodorsals, a basal, small dorsal pair, 1 large median dorsal near 5/6, ca. 6 rather indistinct ventrals, 2 apicals anteriorly. Tarsi plain, tarsus II without specialized flattened surfaces; relative lengths of tarsal segments from base as tarsus I, 13-4-3-2-4; tarsus II, 18-10-8-4-4; tarsus III, 13-18-11-7-4.

Wing elliptical, anal lobe rounded, hind margin straight or with slight sinus beyond tip of vein 6; surface slightly tinged with brown, veins brown. Costa somewhat enlarged in middle of first part; vein 2 nearly straight; vein 3 curving very slightly backward from base; vein 4 bending forward near 2/5 of last part then very slightly arched toward tip, gradually convergent with and ending near vein 3, ending well before wing apex. Crossvein perpendicular with base of vein 5, a little longer than its distance from margin. Calypter pale with black margin, with up to 20 long slender dark setae; halter yellow.

Abdomen strongly tapered, bright metallic green with whitish pollinose spots on middle of sides of tergites, darker and more bluish with distinct slender setae along hind margins of tergites. Hypopygium (Figure 201) dark brown with brownish pollen dorsally, broadly elliptical with basal bulge projecting backward beyond tip of preabdomen; lamellae brown, oblong with a dense crest of long dark setae on upper truncate margin.

**FEMALE.**—Face slightly wider with clypeus more pointed, shorter and scarcely reaching below lower margin of eyes; middle of front not as prominent; antennal segment 1 only 1/2 as long as width of face; segment 3 oval, only about as long as high.

Femora without pale ventral hairs. Hind margin of wing more evenly rounded, costa slightly less enlarged in first part. Calypter with crest of only ca. 10 shorter setae.

**TYPE DATA.**—Holotype ♂, allotype ♀, 4 ♂ and 4 ♀ paratypes from Dominica: Deux Branches, Pagua River 2-3 Feb 1964 H. Robinson (USNM 72928). Additional paratypes from Dominica: 1 ♂ and 1 ♀ Upper Layou 29 Feb 1964 H. Robinson; 2 ♂ 16 Mar 1964 H. Robinson, 7 ♂ and 3 ♀ light trap 13 Mar 1965 W. W. Wirth, all Fond Figes River.

**REMARKS.**—The new species belongs in the large group containing *Tachytrechus albonotatus* (Loew) of the United States and Central America, *T. indianus* (Harmston and Knowlton) of the United States, and *T. vanduzeei* Robinson of Guatemala. The new species is distinct from the first by the lack of longer wavy setae on the hypopygial lamellae, and it is distinct from the latter two by the completely dark legs.

*Tachytrechus vanduzeei* is a new name for *Polymedon notatus* Van Duzee (1929:56). The combination in *Tachytrechus* is preoccupied by the European species *T. notatus* Stannius.

## Subfamily HYDROPHORINAE

### Genus *Cymatopus* Kertész

Rather medium sized, dark with brownish and grayish pollen, setae black. Face rather broad, slightly to distinctly narrowed near middle, transverse suture distinct; front broad, broader above. Palpus short, broad, with numerous hairs, no distinct apical. Labellae not modified; pseudotracheae (Figure 226) 6, massively sclerotized. Hypopharynx (Figure 225) not angular on lateral margins. Antenna with small segments; segments 1 and 2 truncate apically, segment 1 bare above; segment 3 oval, slightly longer than wide, arista apical. Pair of orbital bristles on front, 1 pair of postverticals, lower postocular setae uniseriate.

Thorax gibbous, posterior surface of mesoscutum rather flat; acrostichals absent; 4 or 5 pairs of large dorsocentrals; scutellum with 2 large bristles, 1-3 various smaller setae on each side; only a few weak setae above fore coxa. Fore and middle coxae with sparse hairs anteriorly, middle coxa with less hairs anteriorly and 1 or 2 setae toward side; hind coxa

with 1 lateral seta. Femora without distinct preapicals; fore femur enlarged basally, usually with distinctive ventral setae in both sexes; 5th segments of tarsi broadened, especially on fore tarsus.

Wing narrowly oblong, anal lobe prominent. Veins 2 and 3 and last part of vein 4 nearly parallel, veins 2 and 3 very close; crossvein perpendicular to last of vein 4, 1/2 as long as last of vein 5; vein 6 represented by fold.

Abdomen flattened; setae all short. Hypopygium small, mostly enclosed in tip of preabdomen. Female genitalia with crest of dornen above.

REMARKS.—The genus is widely distributed in the Pacific region. The American species from the Galápagos and Cocos Islands were described originally under the genus names *Aphrosylus* and *Vanduzeeia*. The concept of *Aphrosylus* is presently more restricted while *Vanduzeeia* proves to be a synonym of *Cymatopus*. The present treatment recognizes four American species which are distinguished by the following key. The two new species include one from Dominica and one from Panama and constitute the first records of the genus from the Atlantic.

### Key to the Species of *Cymatopus* in the Western Hemisphere

1. Length ca. 3 mm; 4 pairs of dorsocentrals; crossvein gently bowed outward, about its own length from the wing margin; male with tongue-like projection of face separating palpi; fore femur with 3 rather long, flattened, apically obtuse bristles ventrally on basal 1/5; fore tibia with swelling near middle with a few distinct posterior and ventral setae, with distinctive anteroventrals near apex (Galápagos) ..... *C. setosus*  
Length ca. 2.5 mm; 5 pairs of dorsocentrals; crossvein essentially straight, 1/2 as long as last of vein 5; male with lower margin of face pointed or straight; fore femur without flattened obtuse bristles; fore tibia nearly plain ..... 2
2. Wing vein 3 curved slightly but distinctly backward at tip, veins 2 and 3 not as far apart at tip as opposite crossvein (Dominica) ..... *C. bredini*  
Wing vein 3 not (or scarcely) curved back at tip, veins 2 and 3 as far apart at tip as opposite crossvein ..... 3
3. Knob of halter black; fore femur with 5 or 6 longer setae anteroventrally (Cocos Island, Galápagos) ..... *C. cheesmani*  
Halter yellow; fore femur with only 2 or 3 longer setae anteroventrally (Panama) .... *C. wirthi*

### *Cymatopus bredini*, new species

FIGURES 161, 224-228

MALE.—Length 2.2 mm; wing 2.4 mm by 0.8 mm. Face (Figure 224) mostly grayish, narrowest point twice as wide as antennal segment 1, clypeus slightly pointed in middle of lower margin; front blackish brown pollinose. Palpus, proboscis, and antenna black, palpus with gray pollen. Pseudotrachea as shown in Figure 226; hypopharynx as shown in Figure 225.

Thorax with mesoscutum and scutellum mostly reddish brown; small area on humerus reaching to about 1st dorsocentral, along sides and on flattened posterior slope of mesoscutum, and pleura grayish.

Legs blackish with thin gray pollen. Most hairs of legs short, those of hind femur not as long as width of femur. Femur I (Figure 227) with ca. 7 very long anteroventrals in basal 1/2, 6 short but stout anteroventrals in distal 1/2, ventral surface

with many long slender erect setae forming a posteroventral row in distal 1/2. Tibia I with ventral setae short but erect; tibia II with 2 weak apicals. Relative lengths of leg segments from base as tibia I, 40; tarsus I, 20-11-9-6-7; tibia II, 57; tarsus II, 30-15-8-6-9; tibia III, 55; tarsus III, 25-20-10-7-9.

Wing (Figure 228) tinged with brown; veins brownish to black. Tips of vein 2, and especially vein 3 curved backward, veins 2 and 3 distinctly closer at tips than opposite crossvein. Calypter brownish; halter yellow.

Abdomen dark brownish, grayish pollen thicker at sides of tergites.

FEMALE.—Face 3 times as wide as antennal segment 1, clypeus brownish pollinose down middle. Femur I (Figure 161) more slender at base, ventral setae of base short with anteroventral row usually slightly irregular and similar to other basal ventrals in size and color; tibia I with more reclining ventrals.



**TYPE DATA.**—Holotype ♂, allotype ♀, 23 ♂ and 19 ♀ paratypes from Dominica: Calibishie, seashore 27 Feb 1965 W. W. Wirth (USNM 72929).

**REMARKS.**—The new species is clearly distinct from the related Panamanian species by the differences in shape of the face, the setae of the fore femur, and the venation of the wing. Less distinct is a single female specimen from Dutchman Bay, Antigua, collected 7 January 1965 by W. W. Wirth. The latter specimen is very similar to the Dominican material but differs in having the characteristics as stated in the following paragraph.

Face nearly 4 times as wide below as antennal segment 1, clypeus with only whitish gray pollen. Thorax with more extensive gray pollen, humeral gray spot square and extending beyond 1st dorso-central; scutellum with only gray pollen, with 2 or 3 small setae on sides. Legs dark brownish; femur I with row of anteroventrals less irregular, those on basal 1/2 short but distinct in appearance from other ventrals. Relative lengths of leg segments as tibia I, 42; tarsus I, 20-12-10-6-7; tibia II, 63; tarsus II, 34-16-8-6-8; tibia III, 64; tarsus III, 30-20-10-6-9. Wing scarcely tinged, veins yellowish brown; vein 2 and especially 3 curving slightly but distinctly backward at tip, closer at tips than opposite crossvein. Calypter very pale brownish; halter yellow. Abdomen with grayish pollen most prominent on sides but extending lightly over entire dorsal surface.

**REMARKS.**—The material from Antigua shows an extreme of certain trends among the American species of *Cymatopus*. Northward from the Galápagos the species tend to show a blunter clypeus, a whiter scutellum, and a more curved third wing vein.

### *Cymatopus wirthi*, new species

FIGURES 162, 229-231

**MALE.**—Length 2.2 mm; wing 2.4 mm by 0.8 mm. Similar to *Cymatopus bredini* with the differences as stated in the following paragraphs.

Face (Figure 229) at narrowest point less than twice as wide as antennal segment 1, whitish pollinose with spot of brown on clypeus at suture, and lower margin of clypeus rather sharply pointed.

Mesoscutum with humeral gray spot irregularly shaped, extending to or beyond 1st dorsocentral;

scutellum gray only at base with 1 small seta on side.

Legs blackish with rather whitish pollen; with rather long hairs. Fore coxa with hairs seeming more prominent and paler. Femur I (Figure 230) with ca. 6 short, stout anteroventrals spaced along distal 1/2 to 2/3, 2 or 3 longer anteroventrals near base, ca. 9 short slender erect close-set ventrals in distal 1/2, ca. 3 longer erect slender ventral setae in basal 1/2; femur III with many hairs as long as width of femur. Tibia I with series of many erect short ventrals; tibia II with few short but distinct apicals; tibia III with rather long, slender apical dorsally, 2nd apical smaller below. Relative lengths of leg segments from base as tibia I, 37; tarsus I, 20-9-7-5-6; tibia II, 50; tarsus II, 28-12-8-6-8; tibia III, 50; tarsus III, 20-18-10-7-8.

Wing (Figure 231) with very slight dark tinge, veins dark brown. Veins 2 and 3 nearly straight to tip, vein 2 very slightly flexed forward and as far from vein 3 at tip as opposite crossvein. Calypter and halter yellow.

Abdomen with gray pollen extensive on sides, leaving only narrow dorsal area with less pollen.

**FEMALE.**—Face at narrowest twice as wide as antennal segment 1, rather whitish pollinose with brown spot on clypeus in middle of suture. Femur I (Figure 162) more slender basally, anteroventral row of 9 or 10 erect setae, 5 or 6 distal ones stouter; tibia III with slender apical.

**TYPE DATA.**—Holotype ♂ and allotype ♀ from Panama Canal Zone: Kobbe Beach, July 1967, W. W. Wirth (USNM 72930), allotype ex mangrove.

### Genus *Thinophilus* Wahlberg

Small to medium sized, metallic green color usually obscured by some brownish or grayish pollen; setae black or whitish. Face of male usually broad, sometimes narrowed in middle, female face usually only slightly broader. Palpus often pale and prominent, with numerous hairs, no distinct apical. Proboscis usually black; pseudotracheae 6, massively sclerotized. Antennal segment 1 bare above; segment 2 slightly produced apically along inner side; segment 3 usually rounded, arista dorsal. Head not concave behind vertex, 1 pair of post-vertical bristles; lower postocular surface with many rows of pale hairs.

Thorax with mesoscutum rather evenly rounded; acrostichals absent; 5 or 6 pairs of dorsocentrals; scutellum with 2 large bristles, only a few species with a hair on lateral margin; proepisternum bare above, with 1 to many setae below. Fore and middle coxae with numerous short setae anteriorly, fore coxa rarely with prominent black bristles; middle and hind coxae with black bristle or pale hairs externally. Femora II and III usually with preapical bristles, these sometimes preceded by a row of bristles; tarsi usually plain.

Wing rather oblong, somewhat to greatly discolored. Most of vein 2, vein 3, and last of vein 4 nearly straight and parallel, vein 2 slightly diverging at tip; crossvein perpendicular to part of vein 4, shorter than last of vein 5; vein 6 represented by fold.

Abdomen much flattened. Hypopygium small, borne under tip of preabdomen and often hidden by inturned margins of terga. Female genitalia with crest of dornen above.

REMARKS.—The genus is very well named, being distributed widely on the beaches of the world. The genus is represented in Dominica by the following single species.

***Thinophilus ochrifacies* Van Duzee**

*Thinophilus ochrifacies* Van Duzee, 1924a:101.

MALE.—Length 2.3 mm; wing 2.3 mm by 0.8 mm. Face broad, narrowed slightly just above middle, covered with ochraceous pollen; front dark bronze with some greenish reflections. Palpus with pale ochraceous pollen, paler to whitish toward tip; proboscis black. Antenna reddish yellow, darker toward tip and dorsally on segment 2; segment 3 rounded; arista from near base of dorsal edge,

short. Lower postocular hairs pale.

Thorax bronzed above, dulled with yellowish pollen; pleura more greenish with thicker grayish pollen; 5 pairs of dorsocentrals; 2 or 3 pale setae above fore coxa.

Legs including fore coxa yellow; middle and hind coxae brown; setae of fore coxa very short, mostly pale. Femur III with only short preapical. Tibia I plain; tibia II with anterodorsals and posterodorsals paired near 1/4 and 3/5, ventral near 2/3, 4 apicals; tibia III with anterodorsals at 1/4 and 3/5, posterodorsals at 1/4, 2/5, and 2/3, minute ventral at 2/3, 3 apicals. Tarsi with pale felt ventrally, relative lengths of segments from base as tarsus I, 12-6-5-3-5; tarsus II, 18-8-6-4-5; tarsus III, 11-12-8-5-6.

Wing grayish. Crossvein 3/5 as long as last of vein 5. Calypter and setae pale; knob of halter yellow.

Abdomen metallic green with bronze reflections, dulled with yellowish pollen, more grayish pollen on sides; setae short, black. Hypopygium very small with brown armatures and narrow white pale-pubescent appendages.

FEMALE.—Face slightly wider. Tibia III with 1 or 2 larger ventrals near 2/3. Abdominal tergite 4 and sometimes tergite 3 with series of long marginal bristles posteriorly.

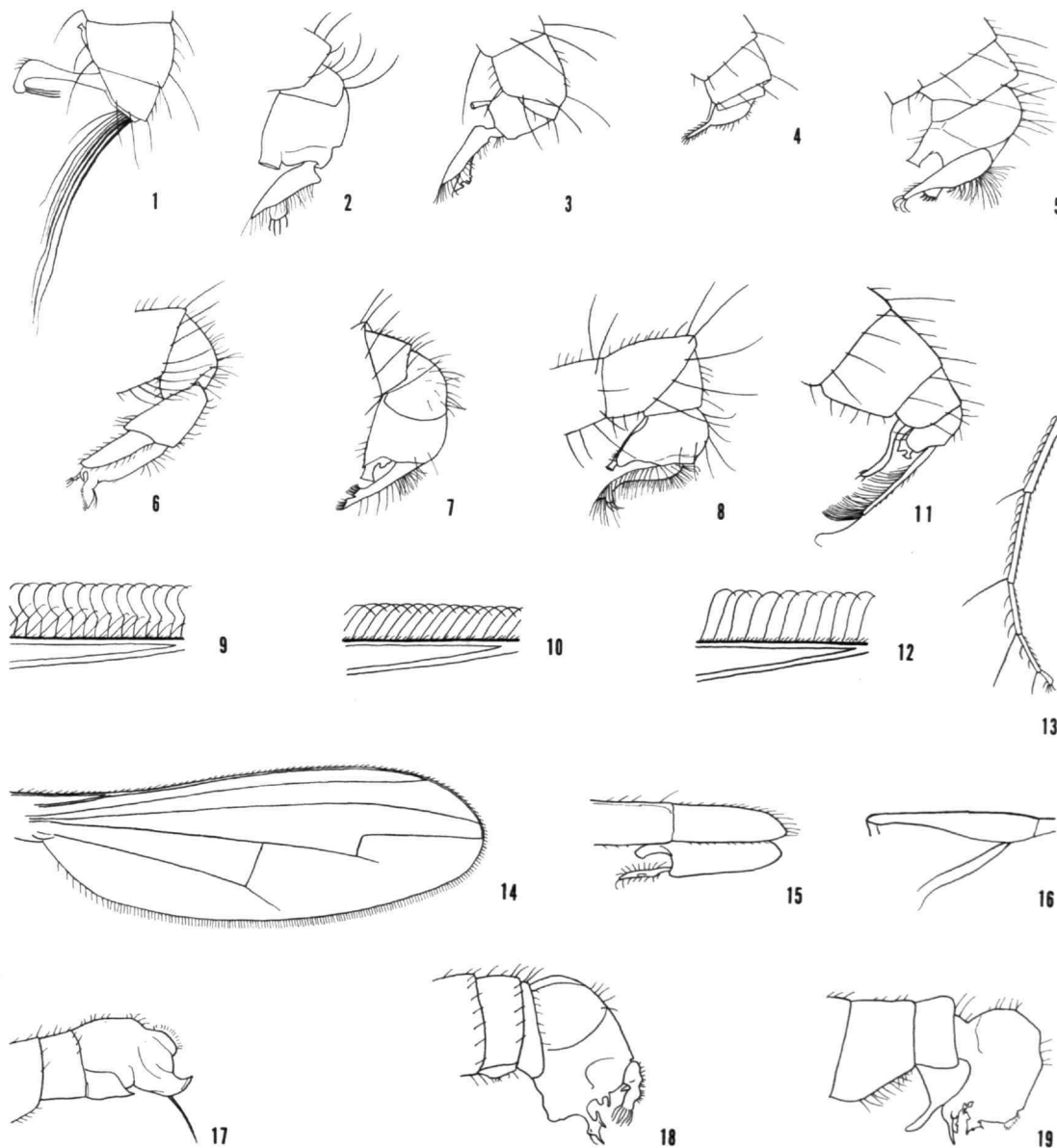
COLLECTION DATA.—Dominica: 7 ♂ and 10 ♀ near Layou 27 Jan–12 Feb 1964 H. Robinson; 1 ♀ 8 Mar, 15 ♂ and 13 ♀ 20 Mar Grande Savane, 1 ♂ and 4 ♀ Layou River mouth 18–24 Mar 1965 all W. W. Wirth.

REMARKS.—The species is known from Nova Scotia and the eastern United States south to Mexico and the West Indies. The species is easily distinguished by the color of the facial pollen and the length of the female abdominal bristles.

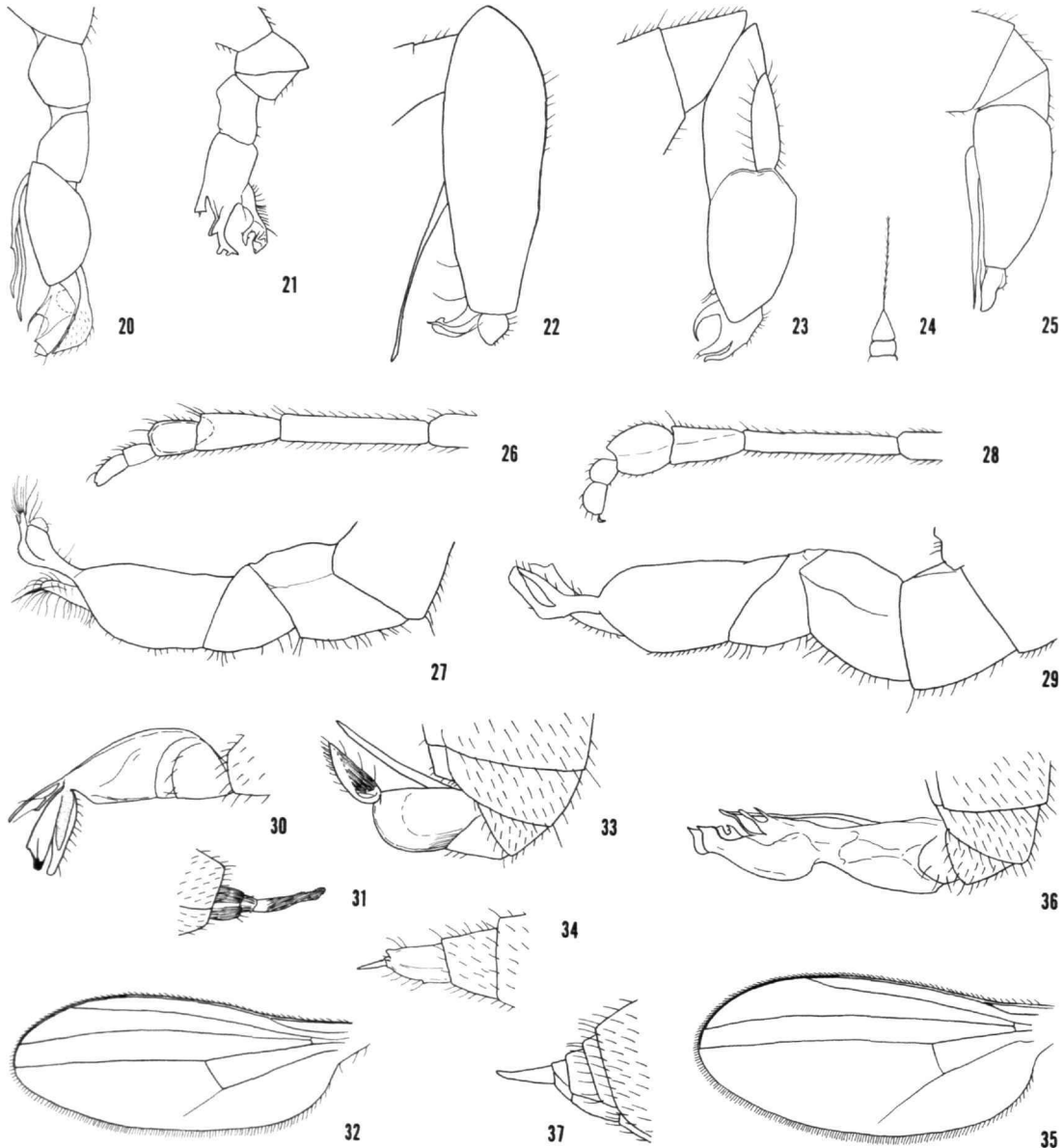
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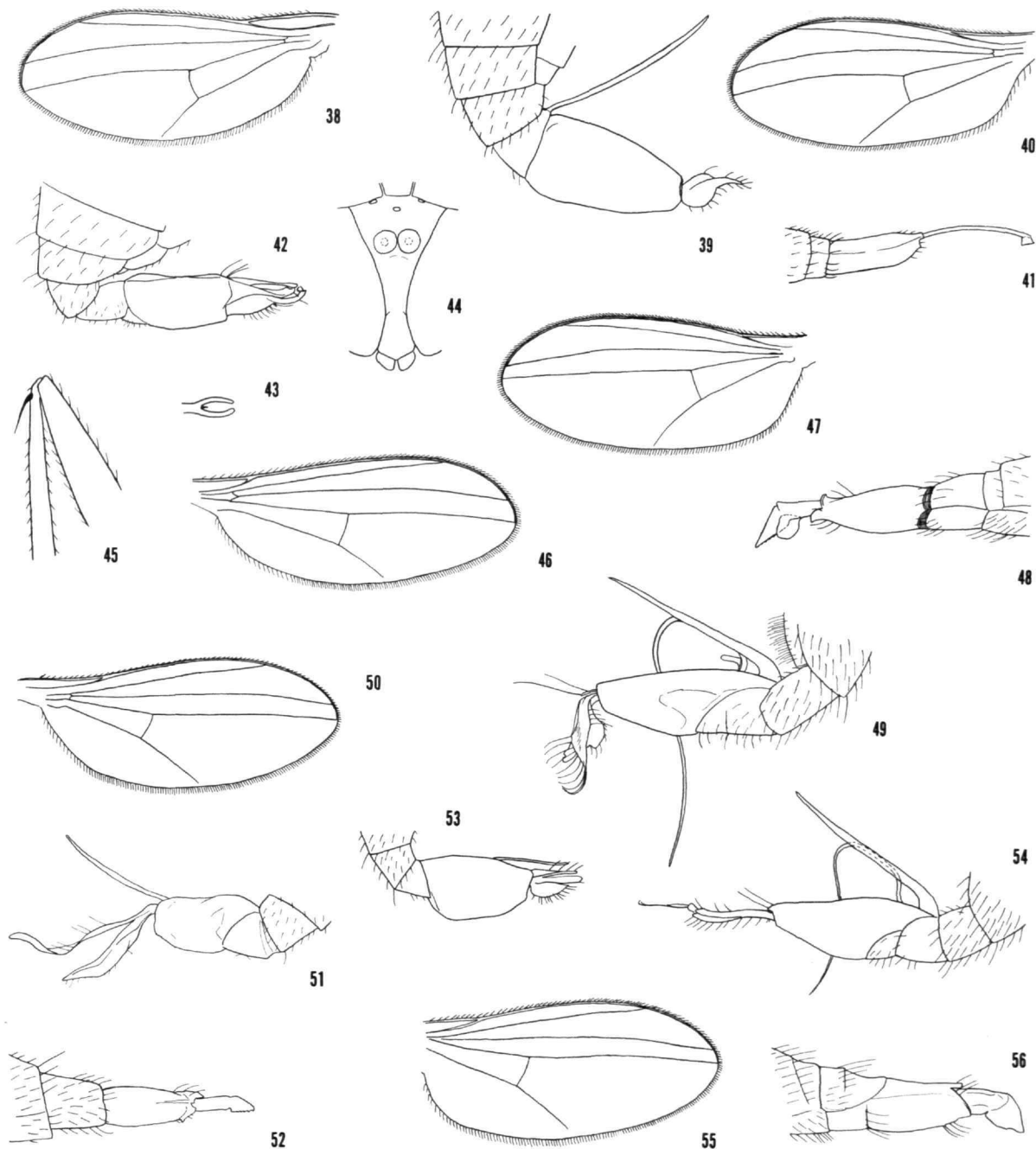


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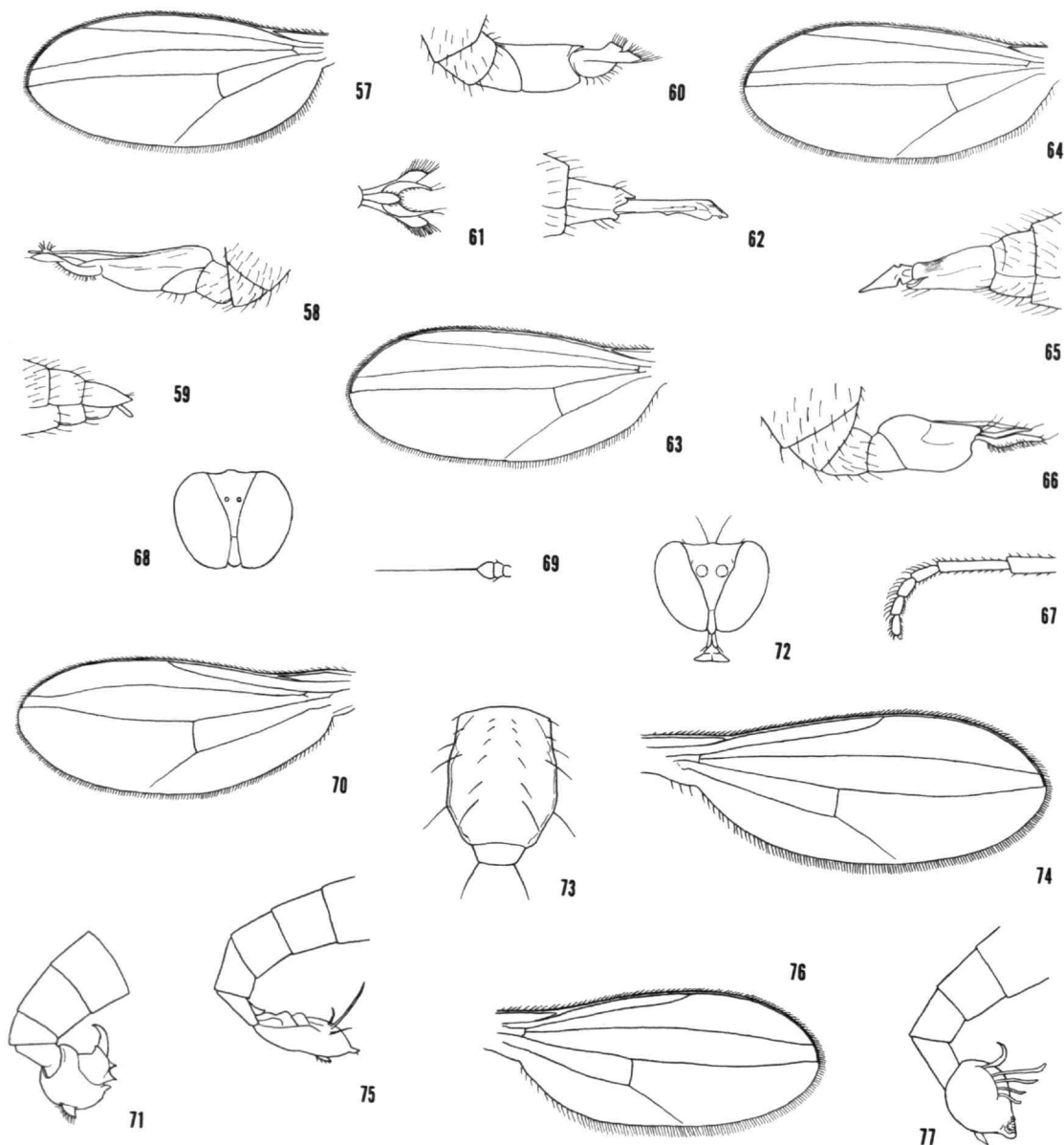


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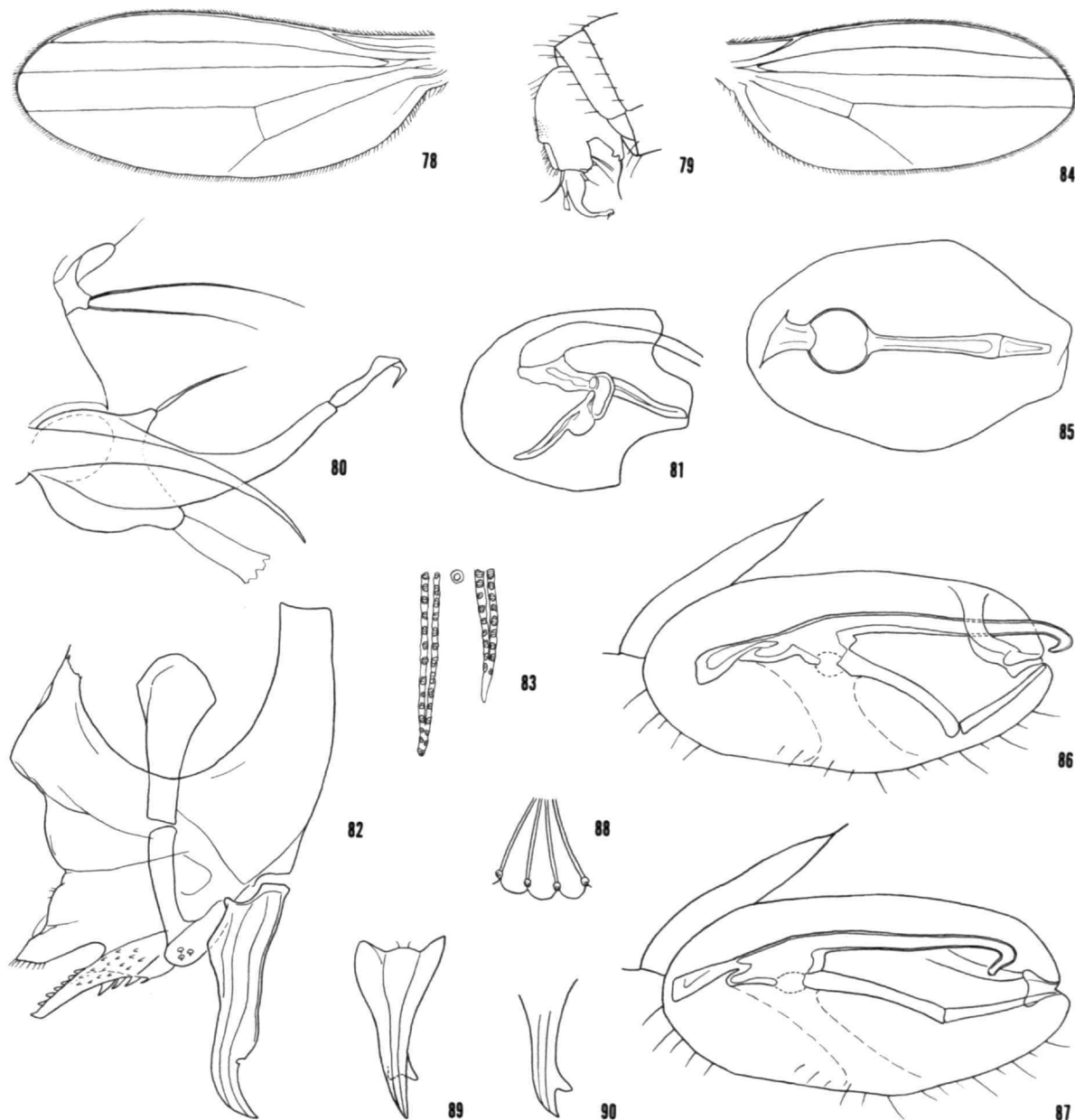




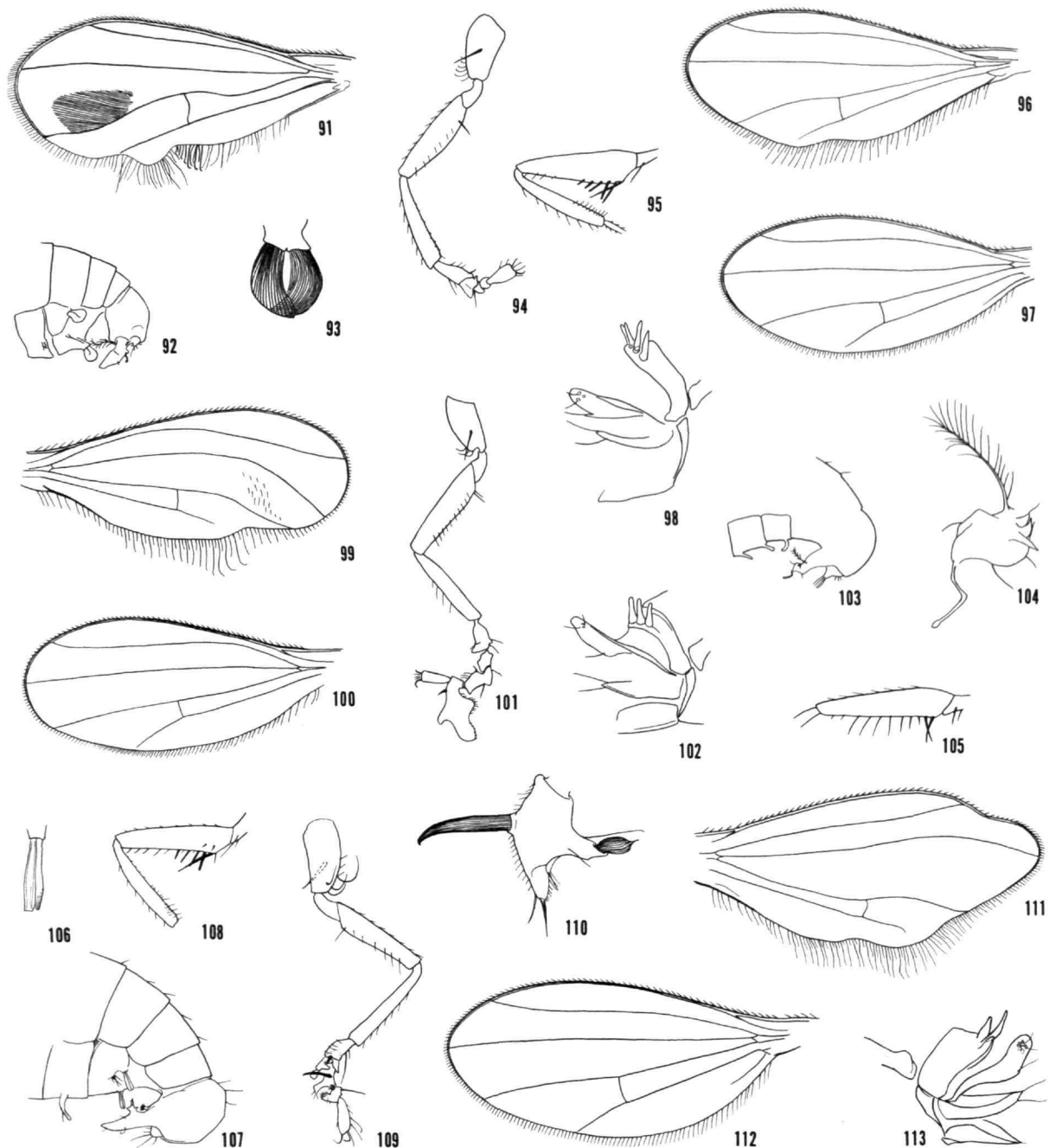
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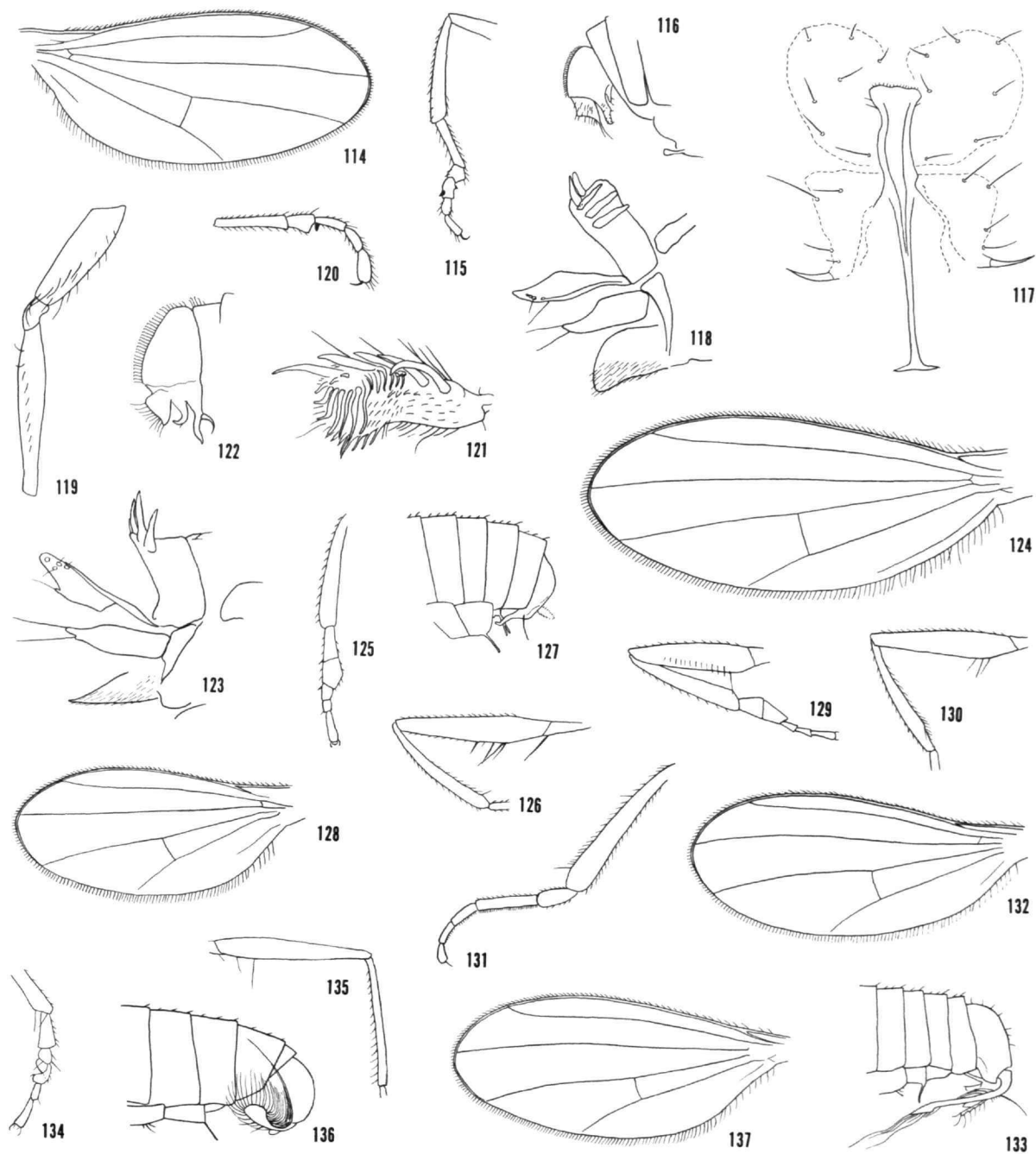
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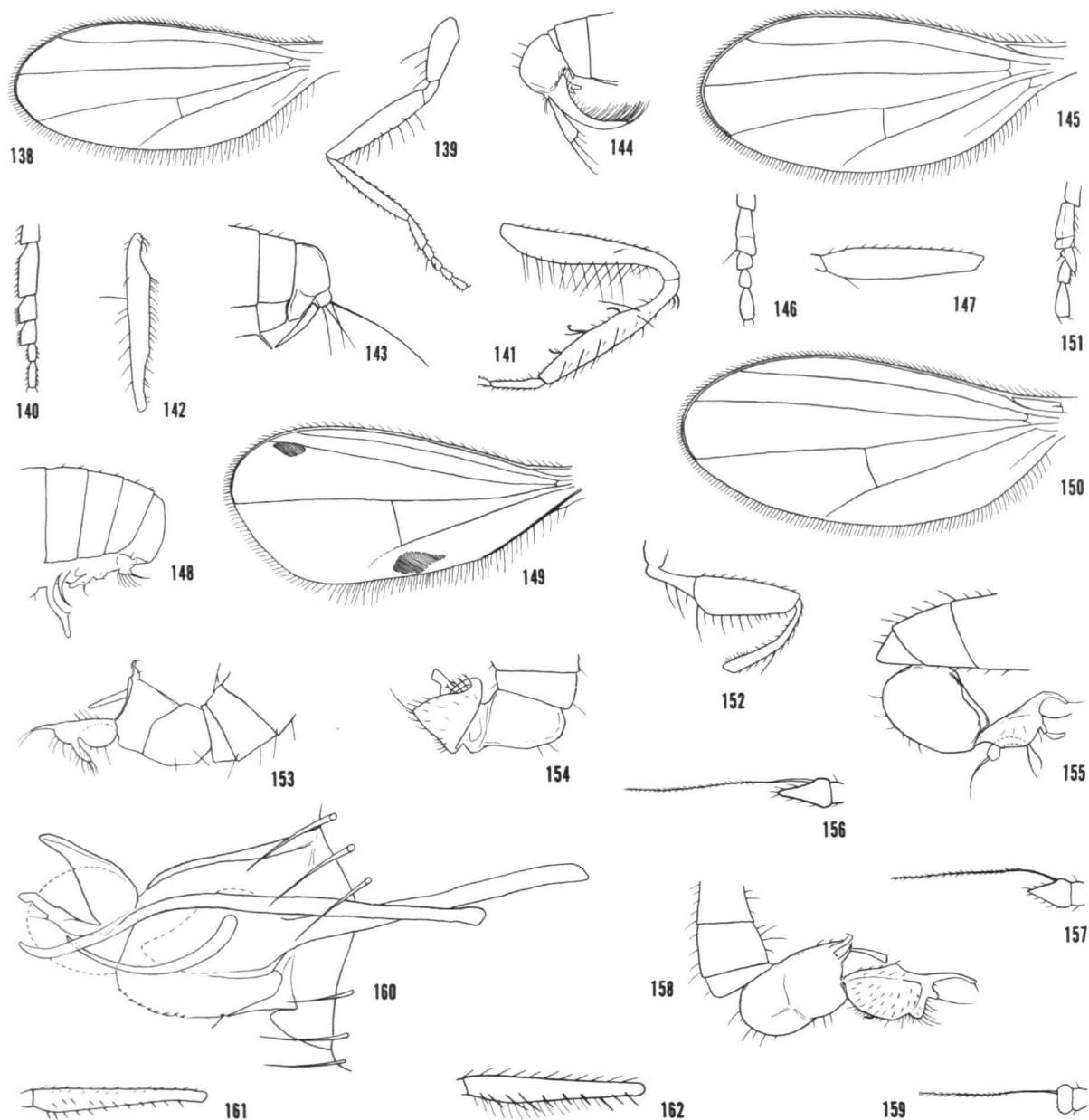


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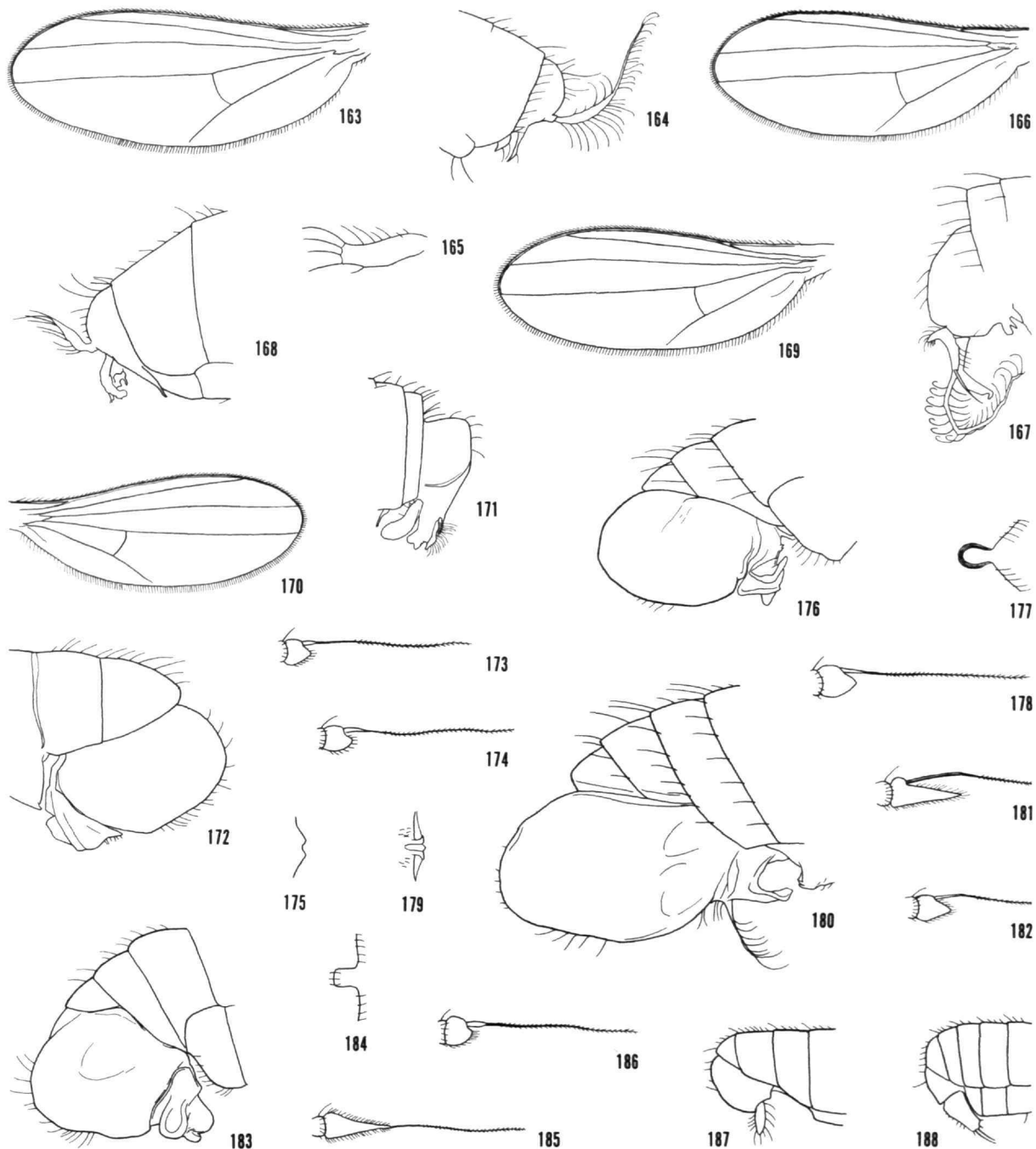


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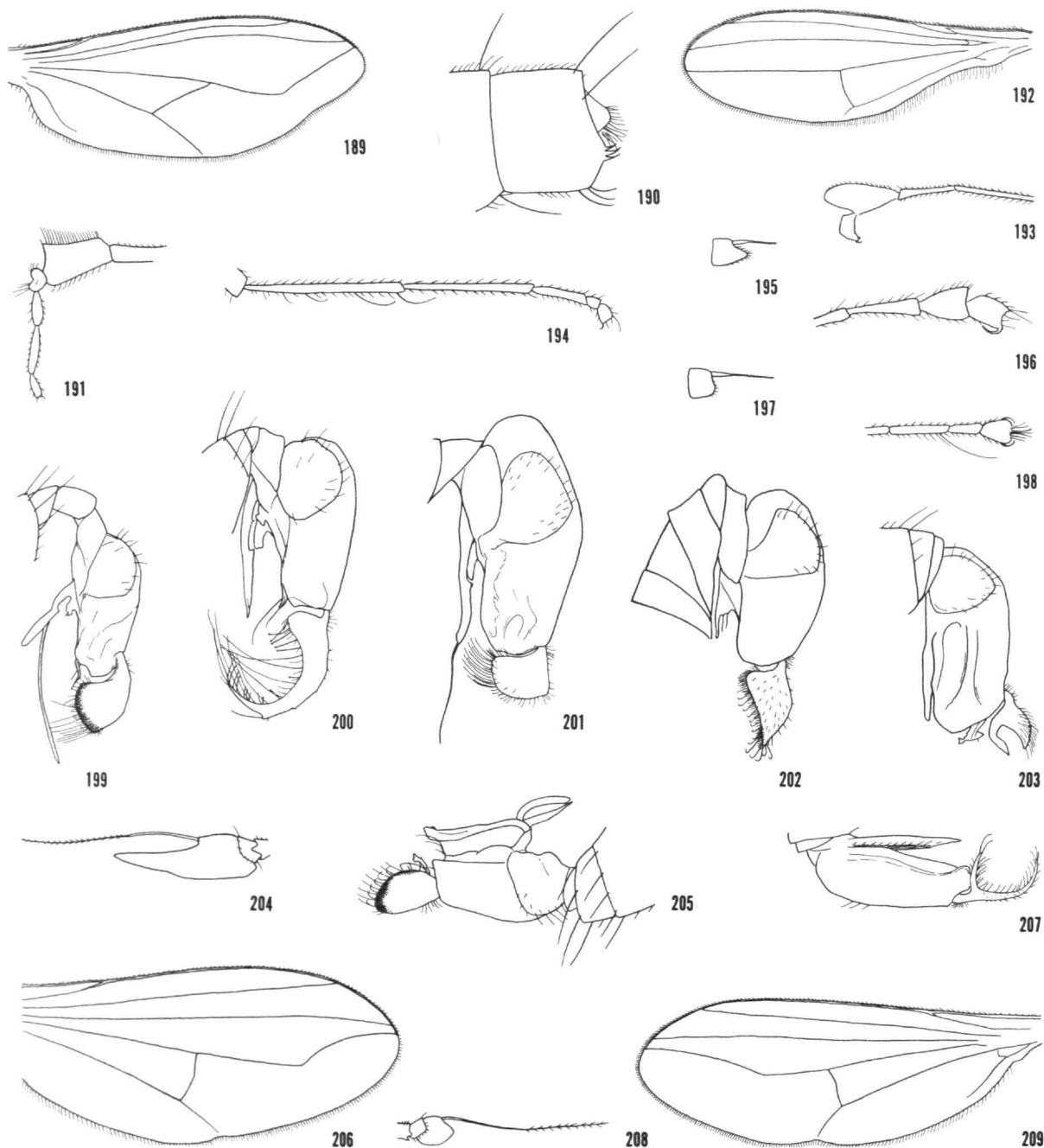




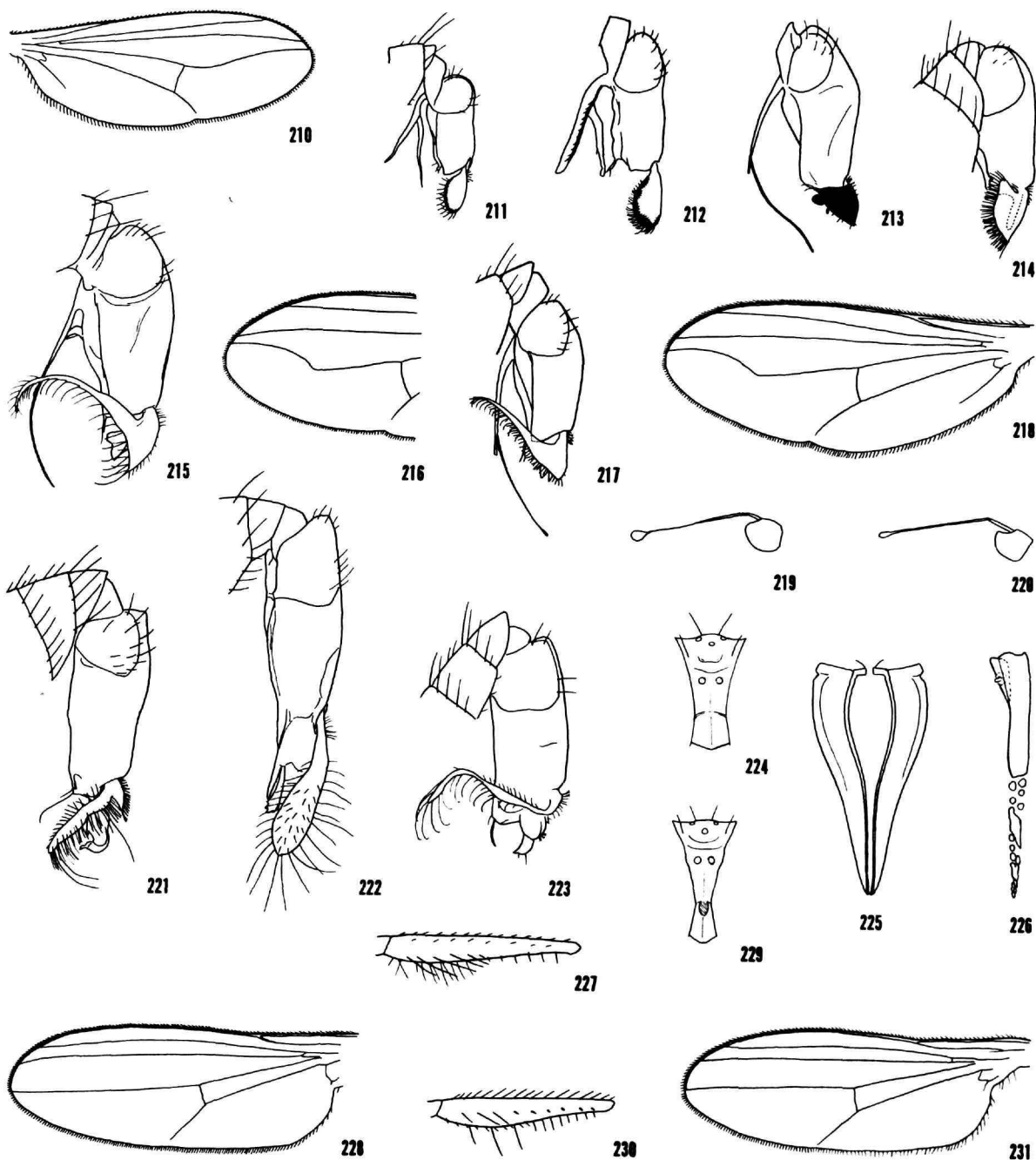
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